AN ABSTRACT OF

A Clinical Lecture

ON

SOME DETAILS IN THE TREATMENT OF ACUTE INTUSSUSCEPTION IN INFANTS.

Delivered at the Hospital for Sick Children, Great Ormond-street, on June 29th,

By H. STANSFIELD COLLIER, F.R.C.S. Eng.,

ASSISTANT SURGEON TO THE HOSPITAL AND SURGEON TO OUT-PATIENTS AT ST. MARY'S HOSPITAL.

GENTLEMEN,—In the short time which is at our disposal it is impossible to discuss more than a very small part of the subject of intussusception. I propose to limit my remarks to details of the treatment of this trouble occurring in very young children. As you know, intussusception is relatively common in infants who are still in arms, and while in older children surgeons are fairly agreed upon the propriety of treatment by abdominal section in most cases, there is no unanimity as to the course to be followed in dealing with very young children.

Before considering any methods of reducing intussusception it may be emphasised that the most powerful cause of the high mortality which attends every kind of treatment is failure in recognising sufficiently early the nature of the case. Failure in making an early diagnosis is sometimes due to intrinsic difficulties; at other times paroxysmal pain and vomiting are assumed to be the results of indigestion and an incomplete examination of the child is made; and among the hospital patients it is most often found that the mother refers the child's symptoms to flatulence and is not alarmed sufficiently to send for a medical man until the child's condition appears serious. It is well to remember that in the early hours of intussusception the infant usually has a lusty cry and does not look very ill. A pinched shrunken face and evidence of marked vital depression are not the rule before the second day. Paroxysmal abdominal pain, whether the infant looks seriously ill or not, should always raise the question of intussusception.

Treatment by Rectal Injection.

This naturally appeals to us as we regard the tender victim, but the horrible uncertainty in which we are likely to find ourselves at the end of the endeavour robs us of all comfort in carrying out this measure. I need hardly remind you that if you inject air or water by a Higginson's syringe you cannot easily measure the pressure you employ, and for this reason it is preferable to use a tube and funnel taking care that the surface of the fluid in the funnel is not raised to a greater height than two feet above the level of the child's abdomen. Chloroform should, I think, always be given.

Injection of air and of water at the same sitting is a very ancient method of treating intestinal obstruction, and in Adams's translation of Hippocrates, in one of the spurious treatises, one reads: "In treating ileus when a clyster fails to relieve the bowels they are to be inflated by means of a bladder attached to a pipe and then the pipe is to be removed and a clyster immediately injected, in which case if the bowels admit the clyster they will be opened and the patient will recover, but if otherwise he will die," &c. As applied to intussusception we cannot find fault with this time-honoured treatment or with the prognosis. At the close of an apparently successful attempt a careful search should be made by bimanual examination for unreduced bowel. In making the bimanual examination, as you pass the index finger into the rectum, do not flex the other fingers or the knuckles will come in contact with the bony outlet of the pelvis and diminish the reach of the examining finger. The fingers should be held in such a manner that the sacrum and coccyx lie in the cleft between the index and middle digit. But neither a negative result of bimanual examination nor temporary respite from pain and vomiting affords assurance of success. Dr. J. D. Mortimer in his often-quoted paper[1] writes: "There is also afterwards a deceptive lull, lasting some hours, due to the effects of shock, anæsthetic, and cessation of feeding, as well as the opium usually given. Such delay may so alter the general and local conditions as to render hopeless any further proceedings." It is probable that many cases which have been thought to be recurrences of intussusception have been examples of incomplete reduction. I have not heard of recurrence following reduction through an incision.

My experience of treatment by rectal injection alone has been very disheartening. Of five cases I saved only one, and while in the other four the tumour disappeared and for a time each child appeared to be relieved, there was subsequent proof that the reduction had not been complete. The most recent statistics which I have seen are those of Wiggin[2] who found that of 72 cases treated by rectal injection of air or of water there were 54 failures and a mortality of 75 per cent.

Treatment by Abdominal Section.

It cannot be denied that infants support abdominal section very badly; exposure and manipulation of the peritoneum produce in them a great degree of shock. I dare say that you have all seen cases in which everything went well during the operation but in which death occurred a few hours later from heart failure perhaps attended by all the phenomena of collapse, perhaps by high fever. It is most important, however, to distinguish cases in which a free abdominal incision is made and in which much exposure and manipulation of bowel may be required, with perhaps a prolonged stay upon the table, from those cases in which reduction can be effected through a very limited incision with little or no exposure and with rapid completion. It is abdominal section *à ciel ouvert* which is so dangerous on account of shock. The method of reduction through a small incision should not have a greater mortality than the operation for strangulated hernia in children of the same age.

Treatment by the Combined Method.

This is illustrated by the following cases:—

CASE 1.—The patient was a male, aged seven months. He was admitted to St. Mary's Hospital on May 28th, 1898, under the care of Dr. H. A. Caley. He was found to be a well-nourished child, not collapsed. There was a tumour in the right hypochondrium and epigastrium. The symptoms were of 60 hours' duration. With Dr. Caley's concurrence I operated in this way. The child being placed under chloroform Mr. Skevington, the house surgeon, injected water by the rectum with an irrigator which was raised to a height of 18 inches above the abdomen. During the injection the tumour could be felt to descend beneath the right rectus muscle. After keeping up the pressure for several minutes the irrigator was lowered and I made a longitudinal cut over the remainder of the intussusception, which could be clearly felt in the right iliac region, the cut being just large enough to admit the index finger. The finger being introduced the irrigator was again raised and I was able to squeeze out by gentle manipulation the small remaining part of the intussusception which to the touch appeared irregularly bossed. The operation occupied a very short time and there was little shock. The child recovered.

CASE 2.—A male, aged 21 months, was admitted to the Hospital for Sick Children, Great Ormond-street, on Dec. 2nd, 1898, under the care of Dr. Penrose and Mr. Kellock, who have kindly allowed me to make use of the case. The child was well nourished and did not appear to be particularly ill. The symptoms were of 11 hours' duration. The tumour was in the right hypochondrium. Under chloroform Mr. Kellock injected air by the rectum and produced descent of the tumour into the right lumbar region. He now made a small incision over the intussusception and in the semilunar line, and raising the mass, which consisted of about one inch of unreduced bowel, to the wound, but without delivering it, he easily reduced it. The child was cured.

CASE 3.—A male, aged four months and two days, was admitted to St. Mary's Hospital under my care on March 5th, 1899. He was found to be a well-nourished child. The symptoms were of 24 hours' duration. The tumour was in the epigastric and right hypochondriac regions. With Mr. Straton's assistance I operated by the method described in the first case. The patient recovered.

[1] THE LANCET, May 23rd, 1891, p. 1144.

[2] Quoted by Jalaguier in Grancher's Traité des Maladies de l'Enfant.

EUCAINE β AS A LOCAL ANÆSTHETIC.

BY GEORGE G. HAMILTON, F.R.C.S. ENG. & EDIN.,
ASSISTANT SURGEON TO THE ROYAL INFIRMARY; LATE SURGEON TO THE NORTHERN HOSPITAL, LIVERPOOL.

FOR a considerable time past I have been trying various local anæsthetics, but the results obtained by eucaine β are by far the most satisfactory. With cocaine one has always had the fear that cardiac or other dangerous symptoms might result. Then with eucaine α, or the first eucaine which was used, the results were not at all reliable and the patients complained of much burning sensation or of absolute pain afterwards. In eucaine β the surgeon seems to have in every respect a most satisfactory local anæsthetic and when one thinks of the dread which many people have of chloroform or ether, and of the number of deaths which are constantly reported in the medical journals as occurring therefrom, it is a great boon to be able to conduct even major operations and to assure the patients that at least there is no danger to life and no fear of suffering from sickness or other disagreeable after-effects.

Method of administration.—I have gone back to a 2 per cent. solution in a number of hypodermic injections in preference to stronger injections (up to 20 per cent.) which were used at first. The 2 per cent. solution, if applied in the line of the cutaneous nerves supplying a part, paralyses sensation over an area at least of the size of a five-shilling-piece, and this for the most part on the peripheral side from where the puncture has been made. For instance, if an operation is to be conducted on the skin of the middle of the thigh it is well to introduce the hypodermic needle in the line of the cutaneous nerves (middle internal and external) and two inches or so nearer Poupart's ligament. If an operation has to be performed on a finger the anæsthetic should be administered in the neighbourhood of the digital nerves as near as possible to the web and on the palmar surface. If the seat of operation is over the middle of the deltoid then the injection is made at a point near where the circumflex nerve winds round the outer side. The skin should be held tightly between the finger and thumb on the proximal side of where the injection has to be made; then a long hypodermic needle should be thrust into the subcutaneous tissue and from five to seven minims injected in two directions from one puncture. Three or four punctures are generally made, but if the patient feels at all another puncture should at once be made or some eucaine solution poured over the wound. It is well first to explain to the patient exactly what is going to be done.

I generally use one syringeful (20 minims) of the solution in three or four places and the syringe is again filled and used to moisten the wound or inject if necessary (40 minims in all). Anæsthesia is produced almost at once, not in 10 minutes, as has been stated, and no suppuration follows the injection if the needle is boiled and the eucaine is prepared with boiled water. I have not yet been able to ascertain exactly how long the anæsthesia lasts but it varies very much—certainly it lasts half an hour in most cases.

I append notes of some of my cases which were operated on by the use of eucaine β, the notes being kindly taken by Dr. J. W. Anderson for the most part at the time of operation.

CASE 1. *Hammer-toe.*—Injection of five minims of eucaine β was made in the course of the digital nerves, one on each side of the toe. The lateral ligaments were divided subcutaneously. There was absolutely no pain.

CASE 2. *Lipoma of the back.*—Four injections of 10 minims each were made around the growth and some liquid was poured on the cut surface. There was no pain.

CASE 3. *Amputation of finger at the metatarso-phalangeal joint.*—An injection was made in the course of the digital nerves. The patient felt little pain during the amputation. In 10 minutes the effect of the injections seemed to diminish and the introduction of the sutures was much more painful than the incisions of the knife or the dislocation at the joint. The wound healed nicely and the patient expressed pleasure at the result.

CASE 4. *Hydrocele.*—The hydrocele was tapped and fluid was withdrawn. 10 cubic centimetres of 2 per cent. eucaine β were injected into the sac through a trocar, followed by two drachms of the Edinburgh solution of tincture of iodine. The patient stated that the injection felt warm. Three days later the patient attended at the out-patient department and the sac was found to be thickened. There had been no pain after leaving the hospital. This is unusual, as the injection of iodine is extremely painful. He made a good recovery.

CASE 5. *Umbilical hernia.*—The patient was a woman who was the subject of phthisis and cardiac mischief. The pulse was very feeble. 40 minims of eucaine β were injected around and in the line of the tenth nerve and about 40 minims were poured on the cut surface. No pain was experienced.

CASE 6. *Myxo-fibroma of the thigh.*—In this case 40 minims of eucaine β were used, being partly injected and partly poured on the cut surface. There was absolutely no pain. The patient stated that he had a sensation as if he were being rubbed with a blunt pin.

CASE 7. *Left strangulated inguinal hernia.*—The patient was a man. Five minims of eucaine β were injected in four places and 20 minims were dropped into the wound. There was no pain in the skin wound, but a little pain was felt when the tight sac was handled. The result was very satisfactory.

CASE 8. *Thiersch grafting.*—The patient was a very nervous old woman. Repeated injections of 10 minims of eucaine were made on the proximal side of the part where the skin was to be removed, 50 minims in all being used. There was absolutely no pain. Seven grafts, varying from one to two inches in size, were transplanted.

CASE 9. *Sebaceous adenoma of the axilla.*—20 minims of eucaine were injected into the pedicle in three places and 15 minims were put on the cut surface. No pain was felt. The operation was begun within five minutes and the painless condition lasted for 10 minutes.

CASE 10. *Fatty tumour.*—A fatty tumour of the size of a filbert-nut (self) was removed painlessly from near the insertion of the deltoid after two injections of 10 minims each.

Eucaine costs 11*s.* an ounce and I have calculated that the expense of the solution for each operation is about 2*d.* The great advantage of not having chloroform sickness to contend with after the operation for hernia not only helps the patient to recover but aids very much the diagnosis of whether or not the cause of strangulation has been relieved. The fact that a hydrocele can be cured by injections of iodine painlessly is very encouraging and Thiersch grafting can now be accomplished by the house surgeon in the ward without disturbing other patients in any way.

It is my intention to try, in operations about the hands, injections into the neighbourhood of the median and ulnar nerves in the forearm, for so far, although operations on the fingers are very satisfactory towards the tips, the amputation at the metacarpo-phalangeal joint was the least satisfactory. Lastly, my own personal experience of having a small fatty tumour (which I had possessed for 15 years) removed without pain was most satisfactory in every way; I felt nothing, there were no after-effects, and the wound healed by first intention. Suppuration did not occur in any of the above cases.

Mr. Prosper H. Marsden, F.C.S., has kindly supplied me with the following information upon the chemistry of the local anæsthetics mentioned above. Eucaine was introduced some two or three years ago by Schering as a substitute for cocaine. It was stated to be a methyl ester of benzoyl-oxy-piperidine carboxylic acid, having the formula $C_{15}H_{27}NO_3$.[1] Merling when engaged on a research upon the close relations of atropine and cocaine showed that ecgonine—$C_8H_{14}NO.COOH$—can be converted into cocaine by replacing the carboxyl hydrogen by methyl and the hydroxyl hydrogen by benzoyl. Having regard to the analogy between amygdalyl-methyl-triacetone-alkamine and atropine the idea suggested itself that by effecting a similar introduction of benzoyl and methyl into y-oxy-piperidine carboxylic acid compounds obtainable by synthesis, products might be prepared which would resemble cocaine in possessing the power of producing local anæsthesia. The synthetic acids of this type were then unknown, but Merling found that they could be prepared by attaching hydrocyanic acid to triacetonamine, saponifying the cyanhydrine so produced, and in this way obtained acids analogous to ecgonine, and as ecgonine may be converted into cocaine by successive etherifications and benzoylating, these synthetic carboxylic acids may, by substituting alcohol

[1] Year Book of Pharmacy, 1896, p. 180. From Pharmaceutische Zeitung, Band xli., p. 279.

radicles for their carboxyl hydrogen, and benzoyl for the hydroxyl hydrogen, be converted into basic products which possess, in common with cocaine, the property of producing local anæsthesia. Eucaine belongs to this class of compounds and is the methyl ester of a methyl-benzoyl-triacetone-alkamine-carboxylic acid as shown by the formula[2] $NMe<\begin{matrix}CMe_2 . CH_2\\CMe_2 . CH_2\end{matrix}>C<\begin{matrix}OBz\\COOMe\end{matrix}$ Recent observations indicating that eucaine hydrochloride has produced a burning sensation when applied to the eye have induced Silex to introduce a new compound of the same class which he finds to be better adapted for ophthalmic use. The name eucaine β is proposed for this substance to distinguish it from the older eucaine, or eucaine α. Chemically it is closely allied to the latter and also to cocaine, and especially to tropacocaine, but it is less toxic than either of the two last-named substances. Though the hydrochloride of the new compound is less irritating it is in no way inferior in its anæsthetic action to that of eucaine α. The constitution of eucaine β is represented by the formula:[3]

$$NH<\begin{matrix}CMe_2 . CH_2\\CHMe . CH_2\end{matrix}>C<\begin{matrix}H\\OBz\end{matrix}$$

Liverpool.

A SEVERE CASE OF TRAUMATIC TETANUS SUCCESSFULLY TREATED WITH SERUM.

BY C. L. FRASER, F.R.C.P., F.R.C.S. EDIN.

A BOY, aged 12 years, received two cuts on the scalp by falling from a wall to the ground on April 14th, 1899. The wounds were well cleansed, stitched, and dressed, and they readily healed by first intention. On the 29th the patient complained of uneasiness in his neck, and the parents concluded that he had caught cold. On being examined there was found to be decided stiffness of the muscles of the back of the neck; the sterno-mastoids were also slightly tense, and the head was rigidly held in one position. On the 30th the stiffness of all the muscles was more pronounced, and on May 1st risus sardonicus appeared and the stiffness of the other muscles was still more pronounced. On the 2nd all the muscles of the back were found to be involved, so that the body was very rigid, and the head was much retracted. Swallowing, too, was sometimes very difficult. The head was still further retracted on the 3rd, and the muscles of the face were rigid. All the muscles of the neck, the back, the thorax, and the abdomen were as hard as boards, so that the patient could be rolled over like a log of wood. The pectorals and arms were so far free and there had been no violent spasm. Up to this point the patient had been taking large doses of chloral, but with very small appreciable results. On this date, too, it was observable that both legs were very stiff and rigid. Through the courtesy of the officials of the Jenner Institute a supply of anti-tetanic serum this day arrived and of this 10 cubic centimetres were injected at 12 noon, and at 10 P.M. 10 cubic centimetres more. On the 4th the pulse was 96 and the temperature was 99° F. Spasms of the abdominal muscles were severe and painful. 10 cubic centimetres of the serum were injected. On the 5th the patient, who had passed a very restless night owing to painful spasms of the abdominal muscles, had very marked risus sardonicus and swallowing was very difficult. There was no evident relaxation of any muscle. 10 cubic centimetres of the serum were injected. At 9 P.M. the patient was free from spasms and had slept peacefully for several hours. The pulse was 88 and the temperature was 98·4°. 10 cubic centimetres of the serum were injected. On the 6th the patient had passed a restless night owing to an aperient having acted. The pulse was 96 and the temperature was 99·2°. The muscles seemed to be slightly less tense and there were no spasms. 10 cubic centimetres of the serum were injected. On the 7th the patient had had a good night, having slept soundly, and he was perfectly free from spasm. The muscles were less tense and he could elevate the knees a little. The pulse was 96 and the temperature was 99°. 10 cubic centimetres of the serum were injected. On the 8th the patient had had another excellent night, having slept well and having been free from spasm. The muscles of the head and the neck were considerably relaxed so that the head was quite moveable. He could nod and pull up the knees. 10 cubic centimetres of the serum were injected. On the 9th the muscles were still more relaxed. The movements of the previous day could be better executed and the muscles of the abdomen seemed to be not quite so hard. The patient lay perfectly quiet, complaining only of a slight stinging sensation in the wounds but there was nothing unusual to be seen. On the 10th there was a much freer movement of all the affected muscles and the patient could move his head freely from side to side and raise both knees. The abdominal muscles were much relaxed.

The subsequent history of the case is one of regular and almost uninterrupted improvement. On the 13th an irritable roseolous eruption appeared on the chest and abdomen which was ascribed to the use of the serum, but it speedily disappeared. On the 15th a small periosteal abscess formed below one of the scars on the scalp. This was incised and the pus was at once forwarded to the Jenner Institute. The officials there very kindly made cultures from it and injected guinea-pigs but with a negative result. The case seems to be worthy of notice from the fact that it was a severe one and the reaction to the use of serum highly probable.

Berwick-on-Tweed.

[2] Geng Merling: Berichte der Deutschen Pharmaceutischen Gesellschaft, Band vi., pp. 173-176. Journal of the Chemical Society, 1897, September A 1, 499. Translation in the Pharmaceutical Journal, Oct. 17th, 1896, p. 337.

[3] Year Book of Pharmacy, 1897, p. 244, from Pharmaceutisches Centralblatt, Band xxxviii., p. 355.

CASES OF AMENORRHŒA ASSOCIATED WITH RAYNAUD'S DISEASE AND PULMONARY TUBERCULOSIS.[1]

BY JOHN W. BYERS, M.A., M.D., M.A.O. (HON. CAUSÂ), R.U.I.,

PROFESSOR OF MIDWIFERY, QUEEN'S COLLEGE, BELFAST.

DURING the past ten years I have met with a series of cases which present certain well-defined clinical features. These prominent characteristics are: (1) diminished or arrested menstruation; (2) local symmetrical asphyxia of the extremities, especially the arms and hands—a condition known as "Raynaud's phenomena"; and (3) pulmonary tuberculosis. The presence of any single one of these symptoms in patients is observed every day, but I do not think that attention has hitherto been called to the remarkable association of all of these clinical features in the same individual. This trilogy of symptoms did not always appear contemporaneously in each of the patients who were affected. In all of them when first seen by me the local asphyxia and the irregularity of menstruation were marked; in two of the patients pulmonary tuberculosis was also co-existent with the other clinical features which I have mentioned, while in two other patients it developed at a subsequent period. I shall now give details of four cases.

CASE 1.—I was consulted in 1892 in reference to a young woman in her seventeenth year with a history that she had been first "unwell" at 15 years of age when residing abroad. During the year preceding that in which I saw her, while she was living at the seaside, the periods had become gradually less and they had completely ceased for the previous three months. While living at the seacoast, at rather an unsheltered place, she noticed that if she was exposed to cold—and she thought bathing first brought on an attack—her hands and arms, for almost half the distance to the elbows, became cold and "went blue." She felt no other sensations in the affected parts. The same signs appeared in the feet but to a less degree. She was thin, but on examination no signs of any organic disease could be detected. The hands and arms, from a point half-way between the elbows and wrists to the tips of the fingers, were cold to the touch, and in appearance presented a markedly bluish aspect, very much like the hue of a child who is the subject of "blue asphyxia." The radial arteries were distinctly felt and there was no tenderness along any of

[1] A paper read before the British Medical Association, August 3rd, 1899.

the nerve trunks. As this patient has ever since been under my care I have had ample opportunity of watching her progress. There were at first intervals during which the arms and hands were of a normal appearance, but now the condition, especially in cold weather, keeps almost permanent. Under treatment the periods reappeared, but for a time they were scanty. In 1896, after an attack of influenza, signs of pulmonary tuberculosis were first detected. She has ever afterwards been obliged, owing to the condition of the chest, to reside abroad each winter and has been treated recently in one of the well-known foreign sanatoria, but while menstruation has become quite normal the peculiar condition of the hands and the arms, and to a less degree of the feet, persists and the local signs of pulmonary tuberculosis still exist.

CASE 2.—A single woman, aged 35 years, consulted me in the spring of this year with the history that since November, 1897, menstruation had been completely in abeyance. In May of that year she got a severe wetting and nervous shock and from that time the periods gradually became less until in the month of November they appeared for the last time. Previously, from her fifteenth year, when they first appeared, they had been regular. She had lost flesh, had suffered from indigestion, and she had the greatest difficulty in finding any form of suitable dietary. After a careful examination I could detect no signs of visceral disease. I was struck with the peculiar coldness and blueness of her hands and the lower half of the arms, which the patient herself said had never been present until the sudden cessation of menstruation. After that she found on any exposure to cold that the hands, the lower half of the arms, and the feet went "cold and became blue." At a subsequent examination there was no further change in her condition except that I detected some signs of pulmonary tuberculosis in the right apex and ascertained that she thought that the hands and arms were almost always blue and cold.

CASE 3.—The patient was a young girl, 16 years of age, in a public institution, who exhibited well-marked signs of tuberculous mischief of the lungs and enlarged cervical glands, in whom menstruation had been arrested for a year after having been present regularly for six months, and in whom for the same length of time the blueness and coldness of the hands and arms had been noticed.

CASE 4.—A young woman, 18 years of age, was brought to me for consultation because the periods had ceased twelve months previously (they first appeared at the age of 15 years). During the same length of time her health had very much deteriorated so that she was unable to attend school. I found signs of pulmonary tuberculosis in one lung and there were blueness and coldness in the hands and arms which became more marked on any exposure to cold.

In none of these four cases was there any sign of cardiac disease, nor indeed any symptoms of note beyond the three to which I have referred. Let me discuss more fully the clinical phenomena met with in them.

1. *Amenorrhœa.*—In three of the cases menstruation was completely absent; in one, while it was in abeyance for a time, it subsequently reappeared, but with no accompanying change in the other symptoms. In three of the patients the irregularity of menstruation was probably due partly to delayed physical development, although as a rule in cases of deferred puberty there is no local asphyxia, a phenomenon which was a special feature of all these cases. In one of the patients (Case 2) menstruation ceased suddenly (perhaps as the result of the nervous shock and the wetting) long after it had been fully established, and she has never since been "unwell." It was contemporaneous with its sudden cessation that the local asphyxia appeared in the hands and arms and feet.

2. *Local asphyxia.*—In his original paper, published so far back as 1862, Raynaud taught that suppression or irregularity of menstruation was often an exciting factor in the causation of the symmetrical condition observed in the extremities. Dr. Thomas Barlow, in his classical article on Raynaud's disease in Allbutt's "System of Medicine," thinks that "there is no very obvious relation to menstruation though in some cases the attacks have coincided with amenorrhœa." All the cases seen by me coincided with amenorrhœa, and certainly Case 2 was in close relationship to the cessation of the menstrual function. It may be that a nervous shock—a neurotic influence is noticed by observers in many of the cases of Raynaud's disease—was the direct cause both of the cessation of menstruation and of the appearance of the symmetrical local circulatory phenomena in the extremities. Further, this should be remembered—that a specialist in women's diseases would be more likely to record the state of menstruation, as, indeed, in these cases it is specially in reference to that function that he is really consulted. Raynaud, in his original communication, divided the cases recorded by him into three clinical groups: (1) local syncope, this being the mildest form, described often by patients as "dead fingers," some portion of the extremities being white and cold; (2) local asphyxia where the parts affected are also cold but have a bluish or cyanotic appearance; and (3) symmetrical gangrene, in which state local gangrene may appear. Raynaud thought that the three sub-groups, (1), (2), and (3), were successive stages of the same malady; but this view cannot be altogether accepted, as frequently the disease never progresses to gangrene. In the cases which I have observed the conditions present were of the second type—local asphyxia—a type which Mr. Hutchinson regards as "the simplest, most common, and least severe of the forms of what is known as Raynaud's disease. Its main feature is a lifelong, and constantly present, excess of susceptibility to the influence of cold, with the result not of pallor (*digiti mortui*) but of asphyxia and blueness. These cases differ from the forms in which acro-sphacelus is threatened in that paroxysmal exacerbations are far less marked. The liability is a constant one, and, having once been developed, usually persists through life."

3. *Pulmonary tuberculosis.*—In all my cases pulmonary tuberculosis was present when the patients first consulted me or it appeared subsequently. Nowhere in the literature of Raynaud's disease can I find any reference to its association with tuberculosis. This may have been a coincidence, but at all events as it was present in every one of my patients it is a striking feature. None of the other nosological affinities of Raynaud's disease which have been noticed by various writers, such as joint and eye symptoms, hæmoglobinuria, syphilis, urticaria, diabetes, &c., were observed in these patients.

I have thought these cases worth recording because (1) they are of interest not merely to specialists in women's diseases but from their striking and varied clinical features to the great body of medical men; and (2) because, although at present we may not be able to say what is the nexus having a distinct relation to the amenorrhœa, the local asphyxia, and the pulmonary tuberculosis, patients with such peculiarly marked symptoms seem to constitute a clinical group *sui generis*, to which attention hitherto has not, as far as I can ascertain, been directed.

Belfast.

ACQUIRED OBLIQUE INGUINAL HERNIA;

150 CONSECUTIVE CASES OF RADICAL CURE; ONE DEATH AND TWO RECURRENCES; A NEW OPERATION.

BY JOHN O'CONOR, M.A., M.D. DUB.,

SENIOR MEDICAL OFFICER, BRITISH HOSPITAL, BUENOS AYRES.

DURING the past five years I have performed 150 operations for radical cure of acquired oblique inguinal hernia—the first six by Barker's method, the next 129 by Halsted's method, and the last 15 by a method which I shall describe in this paper. One recurrence took place in the operation by Barker's method at one month after the operation, and in the operations by Halsted's method one death occurred from acute post-operative mania and one recurrence within three months. As far as slight mortality and permanent results are concerned there is little to find fault with in the operation of Halsted, and were it not for the fact that orchitis followed in 80 per cent. of my cases thus treated and that atrophy of the testicle supervened in 20 cases I should have been very reluctant to abandon this operation. From what I have heard from some Italian surgeons the same sequelæ are frequently observed after Bassini's operation, therefore I conclude that in our two most radical procedures a testicle is often sacrificed and consequently one is forced to question the expediency of such surgical practice, at any rate in children and adults.

After some experience in the surgical anatomy of the inguinal region I have come to the conclusion that the two causative factors in this hernia are the funnel-shaped

process of the peritoneum which, as Mr. Treves tersely remarks, "seems to offer particular inducements for rupture," and the slight resistance offered by the transversalis fascia to any hernial protrusion at the internal ring, and furthermore that no operation merits the qualification "radical" unless it entails the complete removal of the funnel and the reconstruction of the abdominal aperture. The operations of Bassini and Halsted undoubtedly fulfil these requisites, but they err on the side of doing too much, for in both procedures the inguinal canal is split up and obliterated, which to my mind is superfluous, for I do not consider that the canal has anything more to do with the causation of this rupture than have the skin and the subcutaneous tissues in an unbilical hernia. Again, in these operations some of the cord structures are removed and the cord itself is actually placed in an abnormal site, the result being that the testicle only too frequently pays the penalty. The following operation, which is original as far as I am concerned, has for its object the extirpation of the funnel-shaped process of the peritoneum and the fortification of the internal ring against any future attacks.

A three-inch incision is made, commencing at a point half an inch internal to the anterior superior pubic spine, and is carried inwards and downwards to a point one inch above Poupart's ligament. The external oblique, internal oblique, and transversalis muscles are opened by separation of their fibres, as in McBurney's appendicectomy. The funnel-shaped process of the peritoneum is then sought for and a finger is passed behind it in order to differentiate the cord, and with a little dissection the latter is freely separated from the former. The funnel is incised and the intestine and the omentum are pushed upwards into the abdomen by a sponge inserted through the wound. If any bowel or omentum be found adherent *in situ* the complication is easily dealt with, but if such adhesions should have formed low down in the sac upward traction is made on the latter until the testis reaches the external ring and the portion of sac thus exposed is divided from above downwards on its anterior aspect. By this manœuvre the majority of low adhesions can be easily brought into view. In cases of old adherent sacs upward traction might be useless, and then nothing would remain but to open the canal from above downwards. In none of my 15 cases have I had occasion to do this. In two cases where there were low omental adhesions I doubly ligatured the omentum, divided between, and allowed the distal segment to drop back and remain in the sac, and no ill effect followed. The sac is next ligatured below the funnel and divided on the proximal side of the ligature, and the distal portion is dropped back into the inguinal canal and there it remains. It may act as filling material for the canal—not that I think any such is required, but that I do not consider it expedient to divide muscular fibres for the sake of removing it. In cases of bubonocele the small sac may be removed with facility. The funnel-shaped process of the peritoneum is then completely snipped away at its base—i.e., at the level of the normal parietal peritoneum. A large gap is left; pressure forceps are applied, and the cut edges of the peritoneum are drawn down and are united by a continuous catgut suture. Having removed the funnel the opening in the transversalis fascia appears as little like a ring as anything that can be well imagined. I have frequently been struck with the large size of this hole and have wondered how it was that yards instead of inches of bowel had not escaped through it, particularly if the great amount of intra-abdominal pressure which must be constantly concentrated on this point be thought of. Doubtless the oblique muscles save the situation and this in itself is a strong reason for objecting to operations in which these protective muscular fibres are ruthlessly divided. No muscle is strengthened by having a transverse cicatrix formed in it and, moreover, I am very dubious as to the durability of any cicatricial tissue barrier. The edges of the transversalis fascia are next caught by forceps and are drawn well into the field of operation; from four to six silkworm gut sutures are then passed through the external oblique and transversalis muscles and the fascial pillars and are brought out in the reverse order on the opposite side. Care is taken to leave room for the cord to pass into the canal without compression. The edges of the deep wound are now firmly approximated, the sutures are tied, and the ends are cut off. The wounds in the external oblique and the skin are united by separate continuous catgut sutures.

In none of the cases treated by this method has orchitis supervened and no recurrence has so far taken place. I may here mention that I never order a truss to be worn after an operation for radical cure. The advantages which may be claimed for this operation are: (1) the vitality or function of the testicle is not endangered; (2) there being no division of muscular fibres the natural anatomical support is not weakened; (3) the cause of the trouble only is dealt with, and all superfluous surgery is avoided; and (4) the wound is comparatively small, is further removed from the septic area, and it contains no pockets for blood or serum.

Buenos Ayres.

A SUGGESTION AS TO THE TREATMENT OF GRAVES'S DISEASE BY THE ADMINISTRATION OF BILE BY THE MOUTH, HYPODERMICALLY, AND INTRA-THYROIDEAL, WITH CASES.[1]

BY C. M. ALLAN, M.A. ABERD., M.D. EDIN.

I HAVE always found the treatment of Graves's disease on orthodox lines or according to authority to be unsatisfactory and a treatment of the disease which practically resolves itself into a treatment of symptoms. This is what must be expected in the treatment of any disease regarding the pathology of which there is so much uncertainty. As far as I can gather from the limited literature at my disposal pathologists who have carefully studied the disease are becoming more and more unanimous in ascribing it to some perverted action of the thyroid gland and of the thyroid gland alone, and agree that it is a disease of the thyroid gland rather than of the nervous system. In this connexion I may refer to some points in the structure and function of the gland bearing on the case which I am about to relate.[2]

The proliferation of the gland tissue, unlike that seen in other goitres, is of a peculiar character and resembles a proliferation for the performance of increased function and it is provided for in the normal gland by a number of undeveloped glandular spaces, often in clustered masses. As there thus exists normally in the thyroid, as in other glands, a reserve of secreting tissue capable of being developed according to physiological needs during life, it is reasonable to suppose that this could be called upon in an active state of the gland, under undue stimulation from whatever exciting cause capable of setting that secreting function at work, and this evolution for increased function must have some profound effect both on the quantity and on the quality of the secretion. This exciting cause can be mechanical as well as vital, as illustrated by cases which I will mention, and be equally effective in producing an acute attack of the disease. The suddenly developing enlargement of the gland is thus accounted for, and not chiefly from a condition of hyperæmia of the gland as was formerly supposed to be the sole cause.

The presence in the nervous system of changes slight in degree but widespread affecting those centres or nerves which the symptoms would lead us to suspect should be involved, and the fact that the alterations found in the nerve centres are not unlike those found in such diseases as tetanus and hydrophobia and others, suggest that they also may be of toxic origin. Further, the correspondence in many respects of the phenomena of Graves's disease with those produced by artificial ingestion of the gland, besides the undoubted benefit in surgical treatment by the removal of part of the gland, in the one case adding to and in the other case reducing the toxic agent supply, suggest the same conclusion of toxicity. Whatever the active ingredient in the thyroid gland may be, whether in its physiological or in its pathological manifestations, it appears from the investigations of chemists to exist in the gland in minute quantities and whatever the use of the thyroid gland, whether

[1] A paper read before a meeting of the Staffordshire Branch of the British Medical Association, held at Stoke in November, 1898.

[2] For hints on the pathology of Graves's disease I am indebted to the Bradshaw Lecture of 1893 by Professor Greenfield, THE LANCET, Dec. 16th, 1893, p. 1493 et seq.

in blood formation, in proteid metabolism, or in counteracting or supplementing the action of other glands such as the liver, spleen, thymus, lymphatics, and other tissues rich in leucocytes, there is no doubt that its most important function is due to a secretion that can be separated from the gland chemically. This secretion is supposed to be of the nature of a ferment and corresponds in its general behaviour with the enzymes or unorganised ferments derived from the blood of certain animals naturally immune to certain diseases and supposed to derive the immunising action of their sera from those tissues rich in leucocytes already mentioned. These substances are unstable and are destroyed by heating to 60° C. I found that the activity of the thyroid extract is also destroyed by a temperature somewhat above that. The action of bile as a neutralising agent is also destroyed at about the same temperature.

My reasons for troubling with remarks such as these, with the substance of which you are familiar, are to remind you of the probability that although under ordinary circumstances the various structures of a glandular character perform their functions separately and collectively with due regard to the needs of metabolism and to one another the secretion of one gland in the widest sense of the term may have, as well as a special purpose in the bodily economy, a special application to some other gland the action of the secretion of which it may either counteract when excessive or supplement or replace when deficient, and that according to the degree or duration of the control so would the function of the gland be in evidence. The two glands with which I am concerned in the following remarks are the liver and the thyroid: "In the liver under ordinary and normal conditions we have to do with a watery secretion of low specific gravity, excreted in quantity of about 40 ounces daily, containing some 1 per cent. to 2 per cent. solids,—these consisting of certain specific constituents,—the bile pigments and bile acids,—formed by the liver cells themselves; certain inorganic salts, a constant percentage of cholesterin held in solution by the salts of the bile acids and fatty acids, and a considerable amount of a mucoid nucleo-albumin added to the bile in the biliary passages and in the gall-bladder."[3]

What the amount secreted by the thyroid gland under normal conditions is I have not been able to ascertain, but that the excretion can reach pints daily is shown from the description of a fatal case of goitre, after partial removal of the gland, recorded by Mr. Paul of Liverpool,[4] and in which acute symptoms of Graves's disease developed within 24 hours of the operation, death taking place two and a half days after operation. Mr. Paul accounts for the result in this case and for the untoward symptoms in another almost fatal case by the fact that he handled the gland more firmly than in previous cases and thus expressed more of the secretion into the wound, with the result that it was readily taken up by the lymphatics or blood-stream, and that the second case was saved by opening up the wound and either soaking up the discharged secretion or allowing it to escape. In a similar case to this, if one should unhappily occur, I would suggest the application to the wound of sterilised bile—sterilised so that the active principle should not be destroyed, probably best accomplished by Tyndall's method. Thus it is evident that a mechanical factor can originate Graves's disease. In what element of the thyroid excretion the active principle is contained, whether in the colloid matter or in the nucleo-albumin, does not matter for our present purpose. In susceptible subjects or in those who have suffered on previous occasions and who have probably become immunised for a certain time, slight exciting causes are sufficient to produce an amount of the toxic substance capable of setting up in a short time an acute attack of this disease. Not to waste time in any further suggestion at this stage, in what is at best only probable as cause and effect owing to the limited character of the observations and the liability to fallacy from so few data, I will relate the *modus operandi* and result of the experiments.

A tall, sallow, and nervous married woman, aged 50 years, who had been for the last 10 years subject to occasional attacks of what I am satisfied was Graves's disease and who had had on no occasion a thyroid gland sufficiently enlarged to be noticeable except on examination, contracted in March, 1897, an acute attack of influenza with the usual manifestations. She was treated in the ordinary way with salicylate of soda and bromide of potassium, along with antipyrin for the congestive headache, which was unusually severe. On the second day acute enlargement of the thyroid was noticed, the pulse-rate being 160 per minute. During the next few days dyspnœa, almost incessant cough, great nervousness, diarrhœa, vomiting and delirium, with temperature varying from 104° F. downwards were some of the most prominent symptoms. The exophthalmos was difficult to gauge at this time owing to natural projection of the eyeball and from previous attacks. The symptoms varied from day to day, the most constant being the diarrhœa, tachycardia, enlargement of the thyroid, and finally the exophthalmos, both Stellwag's and von Graefe's symptoms being present, with considerable pigmentation round the eyes. Paretic dilatation of the abdominal aorta was also very persistent. Various drugs were administered without much lasting benefit, belladonna and opium checking the symptoms best. What struck me as peculiar—and of this I find no mention in recorded cases in the limited literature at hand and I am therefore unable to state whether it was a usual condition—was the absence of bile from the dejecta and the abundance of pale urine notwithstanding the sweating which was mostly unilateral. This suggested to me a probable paresis of the secretory function of the liver cell and a consequent absence of bile from the bowel and urobilin from the urine. Salicylate of soda and phosphate of potash, both powerful cholagogues, did not influence the secretion though they agreed in other respects. Bile was administered about the beginning of the second week and with almost direct benefit, especially to the diarrhœa and vomiting. The pig bile was prepared for me by Messrs. Burroughs, Wellcome, and Co., and was given in doses of eight grains every four hours, that amount being equivalent to 1500 grains of bile daily. Bile tabloids (keratin coated) were given an hour after food and an hour later 15 grains of bicarbonate of potassium in barley tea to ensure alkalinity of the intestines. The dose was rapidly increased to 2250 grains daily with great benefit, the only other drug given besides the bicarbonate of potassium being 15 grains of antipyrin night and morning as a sedative with phosphate of codeia syrup for the cough. The temperature varied from day to day but kept above normal for nearly three weeks, probably owing to some bronchitis. The tachycardia varied from 147 to 120 during this time, accompanied by systolic bruits. The tremors, which were severe and rapid during the end of the first and throughout the second week, began to modify during the third week. Paraplegia of a functional character, without loss of sensation, was also present at this time, probably owing to the severe diarrhœa and disturbed circulation. The administration of bile was continued by the stomach but in the third week was supplemented by the hypodermic injection of bile, the equivalent of 360 grains being injected between the shoulder-blades. So great was the reaction that six hours afterwards I was summoned and found the patient in great distress, the symptoms being worse than on any previous occasion, the dyspnœa severe and the pulse uncountable. On the administration of antipyrin the untoward symptoms soon subsided and on the next morning the patient was much as usual. Albuminuria, which had been absent for some days, was again present. Notwithstanding the objection of the patient the injections were repeated, beginning with the equivalent of 120 grains twice daily and gradually increasing till on the fifth day I was able with only the temporary discomfort produced by the act in a nervous subject to inject 360 grains night and morning. I may add that an hour after each injection 15 grains of antipyrin in whisky and soda were given, which undoubtedly acted as a sedative and probably modified the reaction of the injected bile. On the sixth and seventh days the equivalent of 180 grains was injected night and morning on opposite sides into the substance of the thyroid gland itself and on the ninth day 360 grains night and morning. This I was led to do with confidence as I was satisfied that there was no excessive hyperæmia of the gland in Graves's disease. At the urgent request of the patient the injections were then discontinued and the administration by the mouth alone was carried on. The improvement was so satisfactory that after some time 120 grains twice weekly only were administered and this amount the patient continued to take for three months. At the end of six months she had gained more than two stones in weight and she expressed herself as feeling better than she had done for 20 years. In the five weeks during which I was in daily attendance upon her there

[3] Hunter: Brit. Med. Jour., vol. ii., 1897, p. 1235.
[4] Brit. Med. Jour., vol. i., 1898, p. 17.

were administered 48,000 grains of bile, 3640 grains of which were injected hypodermically, and of this amount more than 1000 grains were injected into the substance of the thyroid gland itself.

Of the more persistent symptoms exophthalmos, tachycardia, tremors, enlargement of the thyroid, the exophthalmos (or the exaggerated exophthalmos) disappeared quite unnoticed, then the tachycardia, which kept at about 120 for many weeks, and then the tremors, which were the last to disappear. As to the thyroid I cannot speak with certainty, the gauging of its diminution being somewhat difficult. It went down very slowly and the enlargement was in November, 1898, still persisting and firm in consistence, the fibrous growth resulting probably in part from the irritation set up by the injections and in part from natural formation of fibrous tissue. Notwithstanding the amount of bile administered it was not apparent in the dejecta for many weeks and although the tabloids were carefully looked for none were found. I am aware that large quantities of bile may be excreted and may pass into the bowel and be re-absorbed under fairly healthy conditions in cases of constipation, simply from undue delay in the evacuation of the bowels, but considering the diarrhœa and the subsequent regular action of the bowels in this case the re-absorption of the bile must have been unusually active. In the urine there were only slight traces of bile pigment at any time, although there was evidence of bile acids. What became of all the bile administered I will not presume to say. Was it used up in neutralising the products of an exaggerated function of the thyroid gland or in some way modifying their influence on metabolism? The amount of urea excreted was not estimated although the number of red corpuscles appeared to be diminished. It is known that bile has important functions to perform in digestion, especially in the ingestion of fats—a fact of which I took advantage in the administration of food to the patient whose case I have described as well as in administering pancreatic emulsion. Bile also as an antiseptic acts beneficially by preventing the production of harmful toxins or ptomaines and the results of putrefaction either directly by neutralising their effects, by digesting them, or by acting as an antitoxin, or indirectly by stimulating the nerves and muscles of the intestines and thus aiding in the expulsion of the contents before injurious effects arise from their retention and subsequent absorption, as well as by stimulating the secretory glands and thus assisting healthy metabolism.

I was gratified to see in an article by Professor Adami of Montreal on the "Ætiology of Progressive Hepatic Cirrhosis"[5] that he was satisfied that the liver is capable of destroying bacteria and that various bacteria absorbed from the intestinal canal are thereby prevented from getting into the circulation. "In other words, not a little of the fine brown pigmentation recognisable in the liver cells apparently healthy, but not all, is an indication that colon and presumably other bacilli have been taken up by the liver cells and have there been destroyed. This statement I know will be doubted but I make it with a full sense of responsibility." Further on he says that "one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation and to destroy them through the agency of the specific cells of the organ." The same writer found that the colon bacilli when injected into the blood stream were found in abundance in the blood of the heart, in the spleen, and in crowds in the liver, but that when streak cultures were made from these organs abundant colonies resulted from the spleen, heart blood, and kidney, but on taking a considerable amount of liver juice this provides relatively few colonies. He further found that the bile from these cases was sterile.

The conclusion that one can legitimately draw from these experiments is that if the liver excretion has a digestive (may we say antitoxic?) effect on bacteria it may reasonably be assumed to have some neutralising action of a like character on other ferments (or toxins), especially if of less potency as bactericidal agents. That thyroid gland secretion can exercise some modifying influence upon the virulency of various bacteria has been proved by bacteriologists and the juice of the gland has been used as a means of growth in the process of attenuation of bacteria more resistant than the colon bacilli. I have found that if the colon bacilli which produce fermentation of glucose have added to them bile such fermentation is delayed or entirely suspended. That bile has considerable power in neutralising or even destroying the product of some glands is abundantly proved by its action on serpent poison *in vitro* as well as *in loco in corpore* as in the case of serpent bites, the degree depending upon the time and the completeness of contact. I have known diabetes to be suspended in the presence of intercurrent jaundice. That it has some action such as that on serpent poison on thyroid excretion as well is supported by an experiment which I performed later in the year.

I had under treatment a boy, aged 10 years, who was suffering from a disease characterised by symmetrically distributed and recurring series of crops of bullæ affecting the penis and scrotum, the ankles, the hands, the face, and the head principally. He had been under treatment in the North Staffordshire Infirmary for three months and had had various drugs administered without benefit. He was put on thyroid extract and had half a tabloid three times daily and the dose was gradually increased until on the twenty-fifth day the bullæ had entirely disappeared, but not before there were loss of appetite, lassitude, and throbbing in the head, with acceleration of the heart. By mixing bile and thyroid extract in the proportion of from four grains to five grains and keeping the mixture at 39° C. for two hours and then making it up in tabloids, he was able to tolerate three times the dose he had previously had, with not an increase but a gradual disappearance of the thyroidism. Very uncertain conclusions, however, can be drawn from the action of ferments or similar animal extracts on one another *in vitro*, and at best there is only a probability that similar action takes place *in corpore*. The question is, Is the action one of a digestive or an antitoxin?

Presuming, therefore, that the activity of the thyroid gland is produced through a ferment—which may or may not be toxic according to its quantity—the action of bile on this ferment may in the body be analogous to what takes place *in vitro* as in the case mentioned. Where and how the action takes place is less easy of location and explanation. It is probable, from the pathological conditions found in the nerve centres likely to be affected as interpreted by the symptoms produced in Graves's disease—viz., subacute inflammatory changes with leucocytic emigration, suggesting a slight and persistent condition of irritation in the pons and medulla and floor of the fourth ventricle—that the toxic agent has been carried to these nerve centres by leucocytes and that there is set up by the thyroid excretion in undue amount in the blood what is called a "toxic leucocytosis," to be counteracted by an antagonistic leucocytosis set up by the circulation of bile in the blood which may be more strongly so, if this agent be an extraneous one, though of like kind to that which is presumably deficient or defective. Granted that the conclusion which I have drawn—viz., that this case was benefited by the administration of bile—is plausible, founded as it is, however, on so limited data, I may be allowed to suggest further explanation of the *modus operandi*. As in other perturbed states of nutrition and metabolism, as in some fevers and certain poisons, bile is either not excreted in normal quantity or is otherwise altered in character, so that the normal metamorphosis does not take place; so in exophthalmic goitre where there are severe disturbances in trophic and secretory centres bile secretion may be interfered with in quantity and in quality. When bile is discharged into the bowel under normal and ordinary conditions a large proportion of it is absorbed again by the mucous membrane of the bowel and by the biliary passage and finds its way again into the circulation by the portal vein and the thoracic duct. The constant excretion and re-absorption of bile are, in fact, merely part of that osmotic circulation taking place between the gland contents of the body and the blood. The effect of this continual outpouring is supposed to aid metamorphosis; the same substances, more or less changed by being acted upon by the secretions of other glands, seem to be thrown out and absorbed until they are adapted for repair of tissue or become effete. It is likely that the thyroid secretion is mainly excreted by the intestinal mucosa and the skin and to a less extent by the kidney and lungs and it doubtless undergoes the same cycle of excretion and re-absorption. Bile has thus a likely probability of coming into contact intimately and for a considerable space of time with the product of the thyroid gland until both are ultimately extruded from the system.

I was not able to discover any evidence that the administration of bile was followed by any of the symptoms set down to the circulation of bile in the blood such as occur

[5] Brit. Med. Jour., vol. ii., 1898, p. 1215 et seq.

in jaundice or allied cholæmic conditions or by any toxic results such as cholæmic affections are usually credited with. Whether there be any analogy between the disappearance of the tachycardia of exophthalmic goitre and the brachycardia of cholæmia I would not venture to say, or between the antithetic conditions of the two diseases as seen in the nervous, hæmopoietic, vaso-motor, and other systems, producing manifestations so strongly in contrast in the two diseases. But of one thing I am satisfied—that instead of any untoward symptoms being produced there were, on the contrary, a general improvement and a feeling of well-being in the nervous, circulatory, and digestive systems.

Such is a rough description of a suggested method of treatment of what is at best a most intractable and fatal disease, but one which frequently partakes of considerable amelioration in time without any active treatment whatever and is in that respect comparable to what is found in many infective processes from whatever cause arising.

On August 7th, 1899, I examined this patient, whom I had not seen for six months. She looked well and she said that she felt well; there was no palpitation, and the pulse-rate was 86. There were no tremors. The thyroid gland was still somewhat enlarged. She had an attack of diarrhœa in the previous week for which medicine was sent, one dose only being required. She volunteered the information that the thyroid had enlarged somewhat since the occurrence of the diarrhœa and that she did not notice any enlargement before the attack. The gland consisted of tough fibrous tissue.

A woman, aged 45 years, married, and with two children, "caught cold" six months previously to my seeing her. She was said to be suffering from "change of life," although her periods were still regular. She complained of nervousness, palpitation, and debility, that the bowels had become relaxed without any apparent cause or from slight causes, and that she was afraid to sleep. She looked frightened. The patient was pale and sallow and so nervous that she could not articulate properly. There was no exophthalmos but there was slight enlargement of the thyroid, noticeable only on examination. The pulse-rate at first counted 140 per minute and 129 when recounted at the end of the visit. There were tremors of the upper limbs, flexors without interossei, and weakness of the legs. She passed an abundance of pale urine but with no albumin. The diarrhœa was paroxysmal, copious, and pale. Bile equivalent to 240 grains was administered every four hours by the mouth and in three days it appeared in the urine and the dejecta. Owing to an apparent relaxing effect (not paroxysmal) the amount was modified to eight grains thrice daily. Hypodermic injections were given at the beginning of the second week. There were injected in all—one injection being given daily for 10 days—3000 grains. Thyroid so small that only one injection of 120 grains into its substance was given. The administration of four grains night and morning was continued for two months. At the end of that time, though slight nervousness still existed, the tremors were almost gone and the heart was quite steady. The patient had occasionally had relaxed bowels, especially during thunderstorms. She eats and sleeps well and has gained six pounds in weight. The distance at which she lives from my house prevented detailed notes of the case.

Longton, Staffs.

HÆMATURIA, AN EARLY SYMPTOM IN TUBERCULOSIS OF THE KIDNEY; AND RENAL "PHTHISIS AB HÆMOPTOË";

WITH ILLUSTRATIVE CASES.

BY DAVID NEWMAN, M.D., F.F.P.S. GLASG.,
SURGEON TO THE GLASGOW ROYAL INFIRMARY.

THE purpose of this paper is to draw attention to two points of importance, one having reference to the etiology and the other to the early diagnosis of tuberculous disease of the kidney.

In studying the relationship of hæmaturia to tuberculous disease it may be observed that bleedings occur—(1) from injury, independent of any pre-existing tuberculous lesion, the effused blood or injured tissues forming a nidus for tuberculous infection; (2) as early hæmaturiæ, a premonitory symptom of tuberculous disease long antecedent to the development of a gross renal lesion; and (3) as late hæmaturiæ, from destructive tuberculous processes in the pelvis or renal parenchyma.

RENAL "PHTHISIS AB HÆMOPTOË" FOLLOWING TRAUMATIC HÆMORRHAGE.

Hæmoptyses have long been regarded as occupying an important relationship to pulmonary phthisis from the circumstance that they often precede the more evident symptoms and physical signs of the disease. Since early times pathologists have differed in their opinions respecting the etiological importance of such bleedings. One class of observers have regarded the effusion of blood as the origin of the tuberculosis and distinguished it by the old term "phthisis ab hæmoptoë." Others have supposed this explanation to be based upon inadequate foundations and have held to the idea that the hæmorrhages were evidence of the existence of an initial tuberculous lesion, but at the same time they willingly admitted that the occurrence of hæmorrhage may by providing a suitable nidus accelerate the progress of the disease. These two conceptions as to the relationship of hæmorrhages to tuberculosis are probably both correct and certainly are reconcileable with our present knowledge of the etiology and life history of tuberculous disease. No one, however, can now argue, as was formerly contended, that mere blood infiltration can of itself cause tuberculosis; but, on the other hand, it is now fully admitted that injury is an important influence in determining not only the localisation but even the occurrence of tuberculous disease. Probably the best example of this is found in the disease as it attacks bones and joints. The trauma causes extravasation of blood or of serum, and at the same time weakens the resisting power of the tissues of the part. Even in slight injuries where there is no perceptible extravasation the deposit and multiplication of tubercle bacilli may be favoured by the simple disturbance of the circulation associated with the processes of repair. Indeed, the onset of the malady is seldom attributed to severe blows on bones or strains of joints but rather to very slight injuries, which in the first instance attract little attention. It is probable that these slight traumatisms, by depressing the resisting power of the tissues, not only provide a suitable nidus for the implantation of the bacilli, but also supply a pabulum in which they multiply. It is also well known that the employment of force, in rectifying the deformities of bones or of the joints, may lead to a fresh outburst of the disease.

Two conditions are necessary to the establishment of tuberculous disease in the kidney—the presence of a suitable nidus there and the conveyance of the specific organisms to the part. The healthy kidney tissue, being very vascular, has a remarkable power of destroying tuberculous organisms introduced into its substance or of eliminating them from the system. To discuss how this is brought about is beyond the scope of the present inquiry. But an important clinical fact must here be referred to—viz., that tubercle bacilli which are carried by the blood from distant parts may be eliminated without any morbid change in structure being produced in evidence of their sojourn through the kidney. For example, tubercle bacilli may be found in the urine of patients suffering from tuberculous disease of the bones, of the lungs, or of other organs. Their presence in the urine is therefore not pathognomonic of tuberculosis of the urinary tract, and although the observation of these organisms furnishes positive proof that the patient is tuberculous the precise seat of the lesion remains to be determined. In cases where the kidney eliminates these bacilli without itself being involved in the tuberculous process, as an explanation it must be assumed either that the quantity which is carried to the organ at a given time is too small, or that the virulence of the microbes is insufficient to overcome the normal preventive power of the renal tissue and produce a specific pathological effect. The natural power of the renal tissue in destroying micro-organisms may be rendered less powerful by malformations of the organ or by disease. Hence we find that Bright's disease, cystic degeneration, amyloid degeneration, displacements, or congenital malformations all tend to make the kidney more liable to septic and tuberculous diseases, and, as in other organs, so also in the kidney injury or hæmorrhage may be an exciting cause of tuberculosis. In order that tuberculous bacilli may grow and multiply in the kidney it is necessary that they be conveyed

by the blood-stream to a part where there is a favourable soil for their growth and where they are not liable to be washed away by the current of blood or the flow of urine. Suppose that tubercle bacilli are present in the blood when a blow is sustained by the kidney, then the effused blood, with thrombosis of capillaries and the injury of the tissues, provide the conditions required. The following cases are illustrations of tuberculous disease of the kidney following injuries sufficiently severe to produce hæmaturia.

CASE 1. *History of a fall of 26 feet; severe pain in the left renal region; hæmaturia and effusion of blood around the left kidney; apparent complete recovery from injury; two and a half years afterwards suffering from advanced tuberculous disease of the left kidney.*—A man, aged 30 years, was admitted into the Glasgow Royal Infirmary on May 11th, 1893. The patient was working on the deck of a steamer when he accidentally fell into the hold, a distance of 26 feet. He was rendered unconscious and when admitted to the hospital was suffering from severe shock. Besides other injuries he complained of severe pain in the left lumbar region and the first urine passed after admission contained a considerable quantity of blood. On examination a distinct fulness and increased resistance were made out in the left flank and over this area the percussion was dull. The patient made a slow but steady recovery, but he was detained in hospital until August 17th on account of the other injuries, the kidney condition having apparently been recovered from within a fortnight. The hæmaturia disappeared 10 days after admission. The man was again seen on Nov. 27th, 1895—two and a half years after the accident—by Dr. D. McKellar Dewar, who recommended him to go into the hospital, but this he refused to do, preferring to be under the care of his private medical attendant, with whom Dr. Newman saw him in consultation. The patient stated that he remained well and was able to follow his occupation until the end of May, 1895, when he complained for the first time of a recurrence of the pain in the left lumbar region, and although on palpation a distinct fulness could be made out no fluctuation was detected. The urine was free from any deposit, blood, or albumin. Tubercle bacilli were not looked for. In November the urine contained an abundant muco-purulent deposit, six specimens of which were examined for tubercle bacilli, and in two of these bacilli were found. From May to November the patient's general health rapidly deteriorated, his appetite was impaired, and he lost 16 lb. in weight. The evening temperature was elevated irregularly and he complained of night-sweats, but there was no vesical irritation. By the end of December a distinct fluid accumulation was discovered in the left kidney and the patient was advised to have a nephrotomy performed when the kidney was found to be occupied by a typical tuberculous pyonephrosis.

CASE 2. *History of a blow causing ecchymosis in the right lumbar region; hæmaturia of five days' duration with one recurrence on the eleventh day; severe pain and some swelling in the right renal region; six months after the injury the urine became muco-purulent and bloody; symptoms and physical signs of renal phthisis.*—A woman, aged 47 years, was admitted into the Glasgow Royal Infirmary on August 2nd, 1895. On inquiry it appeared that in January the patient fell from "house steps," a distance of eight feet, and on falling struck her "right side" against the back of a chair. The blow was received on the right lumbar region and it caused considerable ecchymosis between the lower ribs and the crest of the ilium. On recovering from the immediate shock of the injury she suffered from severe deep pain in the region and the urine which was first passed after the accident contained blood. The hæmaturia continued for five days after the injury and recurred once only on the eleventh (?) day. There was some swelling in the region of the kidney, but how long it lasted the patient did not know. Since the fall the "side" had always felt weak, but the pain was not severe till seven weeks previously to admission to the infirmary, and about the same time she observed the urine to be dark in colour and that it contained blood together with a white deposit. On admission the patient complained of a swelling in the right lumbar region. She had always been rather spare in body and lacking in colour, but she said that she had fallen off considerably of late. About a month previously to admission she had pain in the lumbar region whenever she moved about and about the same time the urine presented the abnormal appearance above mentioned. On examination the whole space between the liver and the crest of the ilium was dull and fluctuant and presented the characteristic features of a large pyonephrosis, but there was no sudden discharge of purulent urine at any time. The specific gravity of the urine was 1012, it was strongly alkaline and contained a considerable quantity of pus, some blood, and crystals or oxalate of lime; tubercle bacilli were also numerous. On August 17th the kidney was incised, when a large quantity of pus, urine, and tuberculous débris was evacuated, and a large cavity was scraped out with a Volkmann's spoon. Later in the history of the case the lungs became involved, there being dulness and abundant moist râles at the bases of both lungs behind, but at the apices there was no evidence of consolidation.

In each of these cases it was clearly shown by the history that the patients enjoyed perfect health until the occasion of the injury and it may be safely presumed in both instances that the traumatism was the only cause of the hæmorrhage. In cases where slight indirect violence has been followed by the appearance of blood for the first time the question may be legitimately raised as to the presence of pre-existing disease, which may not, up to the time of the accident, have shown itself by hæmaturia. But in these cases the blows were severe and direct and sufficient to injure the kidney. The most reasonable explanation seems to be that the injury reduced the resisting power of the organ, and at the same time caused an effusion of blood into its substance; that tuberculous bacilli were present in the effused blood or were conveyed to the neighbourhood of the effusion later, took root and multiplied and formed the centre of infection and thus produced what may be called a renal "phthisis ab hæmoptoë."

EARLY HÆMATURIÆ A PREMONITORY SYMPTOM OF TUBERCULOUS DISEASE LONG ANTECEDENT TO THE DEVELOPMENT OF A GROSS RENAL LESION.

It is by no means uncommon to meet with cases of profuse and frequent hæmoptyses long prior to the development of any recognisable physical signs of pulmonary phthisis; so also in renal tuberculosis, hæmaturia may be present as a premonitory symptom of the disease. Those who have had much experience in the post-mortem room must have seen cases of chronic phthisis pulmonalis where shortly before death hæmorrhages have occurred and blood has escaped into the parenchyma of one kidney or into the pelvis, and where on minute examination the renal tissue or even the effused blood was found to be occupied by tubercle bacilli; yet on microscopic examination the histological structure of the kidney was little altered, and, beyond the blood infiltration, presented the same microscopic appearance as its fellow on the opposite side. In such cases numerous tubercle bacilli may be found in the thrombosed vessels of the Malpighian tufts without any inflammatory changes having taken place.

But while hæmoptysis has been looked upon as a valuable danger signal of phthisis pulmonalis, even when unaccompanied by other physical signs, hæmaturia has not been regarded in the same light, although doubtless in some instances it carries with it the same warning of trouble to come. Hæmaturia is often the first indication of danger and induces the patient to seek advice, and in many instances, unless repeated and most minute examinations are made, the medical adviser may find it difficult to arrive at a satisfactory explanation of the symptoms. In tuberculous disease the urine presents very marked variations in the different stages of the malady; in the initial phases of the affection the presence of the virus induces a congested condition of the organ and hæmorrhages occur which are analogous to the early hæmoptyses of pulmonary tuberculosis and are probably due to a local interference with the circulation arising directly from the intimate relationship of the tuberculous deposit with the vascular supply.

CASE 3. *Profuse hæmaturia with slight pain in the left kidney recurring thrice; no other deposit in the urine and no swelling in the lumbar region; apparent recovery for two years followed by a relapse of the symptoms and a swelling in the left lumbar region; muco-purulent deposit in the urine and tubercle bacilli; no vesical irritation.*—A young woman, aged 18 years, consulted me in September, 1893, on account of a profuse hæmaturia which had occurred a fortnight previously. No reason could be assigned for the onset of the bleeding and it was unaccompanied by any pain over and above a sense of fulness and weight in the left renal region. A careful examination of the urine failed to reveal any abnormal constituents beyond

a small trace of blood, but the hæmaturia had practically disappeared at the time I saw the patient. Three months after this first hæmorrhage a second attack, not so profuse or so prolonged as the first, occurred and two months thereafter a third attack, all without any concomitant symptoms. On account of the difficulty in forming a diagnosis an examination of the bladder was made during the last attack and blood was seen issuing from the left ureter in a distinct cloud. It was therefore evident that the hæmorrhage was of renal origin, but as there were no symptoms pointing to the nature of the malady complete rest in bed was enjoined and the patient made what was regarded at the time as a complete recovery. Two years after the first hæmorrhage a fourth hæmorrhage occurred; this was associated with considerable pain in the left lumbar region and a distinct swelling could be made out by palpation. Examination of the urine two weeks after the hæmorrhage occurred showed it to contain a deposit of muco-purulent material as well as blood corpuscles and on microscopic examination tubercle bacilli were discovered. Still there were no symptoms present indicating any irritation of the bladder. The temperature was now elevated for the first time and the patient suffered from night-sweats, but there was no emaciation, loss of appetite, or serious constitutional disturbance.

CASE 4. *Hæmaturia 13 years previously to admission and again nine years after the first bleeding; large tuberculous pyonephrosis.*—A man, aged 39 years, was admitted to the Glasgow Royal Infirmary on April 28th, 1896, complaining of pain in the region of the right kidney. The patient's first trouble in connexion with the urine dated back to 13 years previously, when he had a slight attack of hæmaturia accompanied by pain over the right kidney, but these symptoms passed off in a few days. The patient had been in the infirmary in February, 1896, with hæmaturia. He first noticed blood regularly present in his urine in November, 1895. He, however, was able to continue at work until the end of January, 1896, when he came into the hospital; at that time the hæmaturia was very considerable. He said that it was only three weeks previously to admission that he noticed anything like severe pain in the right side and since the pain came on he had not noticed any blood in the urine. On examination a very distinct fulness was found in the right lumbar region. The whole space between the liver and the crest of the ilium was dull on percussion and on pressure considerable tenderness was produced. The thoracic organs and the other abdominal organs were normal, so also was the bladder. The urine contained a considerable quantity of pus and some blood and tubercle bacilli were present. The left kidney was healthy. On operation a large tuberculous kidney was discovered on the right side; it was scraped and evacuated.

In early hæmaturia the urine contains blood but is free from tuberculous deposits such as can be recognised by the naked eye or even by the microscope. Cultivation observations and inoculation experiments may, however, detect the presence of tuberculous bacilli.

LATE HÆMATURIA, FROM DESTRUCTIVE TUBERCULOUS PROCESSES IN THE PELVIS AND RENAL PARENCHYMA.

When the kidney parenchyma and the calyces become more seriously involved the characteristics of the urine are more distinct, but this is not always the case. The physical characters of the urine are in some instances such that one can with certainty state that the urinary tract is the seat of a tuberculous lesion, while in other cases the excretion may be to no appreciable extent altered from the normal. Before destructive processes commence within the renal pelvis or substance traces of albumin and small quantities of blood may be detected, but when the tuberculous deposit has commenced to break down and to evacuate into the ureter the quantity of albumin is increased, the urine is liable after a time to become alkaline, and along with greater or less quantities of débris of renal tissue pus appears in considerable quantity. The albuminuria differs from that of Bright's disease in that the urine is not clear, but contains much mucus; it is viscid, cloudy, and opaque, and it does not contain tube-casts. The deposit contains small caseous masses mixed with renal débris and on standing, although a considerable amount of pus may be precipitated, a certain quantity remains suspended and imparts a cloudy appearance to the fluid.

It is only in rare instances that profuse hæmaturia occurs in renal tuberculosis. Trautenroth[1] records the case of a woman, aged 24 years, who was the subject of pulmonary tuberculosis in its early stage, but who also suffered from profuse hæmorrhage from a tuberculous kidney which necessitated nephrectomy. The pelvis of the kidney was filled with coagulated blood and upon one of the papilli a considerable ulcer was discovered. The parenchyma of the kidney was the seat of a diffuse tuberculosis. The urine before the operation was found to contain tubercle bacilli. The patient made a good recovery. Routier[2] records a somewhat similar case where the right kidney was the seat of a large tuberculous ulceration. Severe hæmorrhage occurred and continued during 17 days, associated with renal colic. On making pressure over the right kidney blood was seen to escape from the right ureter by the cystoscope. The kidney was removed and the patient made a good recovery.

CASE 5.—The only case worthy of note where severe hæmaturia occurred in advanced tuberculous disease was in that of a man, aged 37 years, who was admitted to the Glasgow Royal Infirmary on June 16th, 1895. The patient was under treatment for a long period for tuberculous disease of the right kidney, and whilst occasional slight hæmaturiæ were observed from time to time, it was not until March, 1897, that a large amount of blood escaped and at that time a very considerable hæmorrhage, amounting as the patient thought "to about a pint of blood and blood-clot" escaped, but as far as is known no recurrence of bleeding of such dimensions occurred.

As the disease advances the odour of the urine as a rule becomes more and more offensive; the fluid deposits large quantities of mucus and triple phosphates and on examination it is found to be highly albuminous. Occasionally while the urine is pale and of low specific gravity there may be evidences of retention on the diseased side, as shown by increase in the renal swelling, with perhaps indistinct fluctuation and pain accompanied by general constitutional disturbance, or there may be complete suppression, death being ushered in by uræmic symptoms.

In addition to the diagnostic points already indicated the detection of the tubercle bacillus in the urinary débris is of great value. It is when tuberculous lesions begin to break down that tubercle bacilli are most abundant and sometimes their number is very large. Several examinations are required before it can be concluded from negative results that the case is not tuberculous. It is more difficult to obtain the bacilli from urine than from sputum, they are less numerous in proportion to the medium in which they lie, decomposition destroys them more rapidly, and smegma bacilli are apt to be mistaken for them. The method is as follows. Allow a quantity of urine to stand in a conical glass in a cold place for not more than six hours and from the deposit select a small quantity of débris, place it in a glass of ¾ per cent. salt solution. It is more rapid and more reliable, however, to obtain their separation by the employment of the centrifuge. This method should always be resorted to when the numbers are small or when the urine contains much mucus or blood. When large quantities of mucus are present it may be necessary to render the urine slightly alkaline before using the centrifuge. Having placed a small fragment of the débris on a clean cover-glass it should be spread out into a thin layer by pressing another cover-glass against it between the finger and thumb. On separating the cover-glasses a thin film of débris will be found adhering to each. The glasses must be air-dried and then the films may be more firmly fixed by drying over a spirit-lamp or in front of a fire. The cover-glasses are then placed in or, still better, floated upon (with film side downwards) a solution of aniline magenta or a staining fluid of gentian violet. When the film has become sufficiently stained the colour may be abstracted from all structures other than the tubercle bacilli by passing the cover-glass through a 25 per cent. solution of nitric acid. The action of the acid may be arrested by carefully washing the specimen in pure water. When examining the urinary débris for tubercle bacilli it is necessary in most cases to prepare at least half a dozen specimens. Should bacilli be present they will be recognised by a magnifying power of 750 diameters as minute rod-shaped bodies, coloured according to the nature of the staining fluid employed. They are from three to seven micro-millimetres long, they may be straight, but are more frequently curved or bent upon themselves at an obtuse angle, they are frequently beaded, and they occur in bundles or singly. From the urine

[1] Centralblatt für Chirurgie, 1896, No. 16.

[2] Bulletin et Mémoire de la Société de Chirurgie de Paris, vol. xxi., p. 148.

the micro-organisms are not easily cultivated, as putrefactive bacteria contaminate the culture and destroy the specific bacilli. Koch, however, states that he has succeeded in cultivating tubercle bacilli from cases of tuberculous pyelitis.

In some instances the bacilli in the urine are so few in number that it is difficult or almost impossible to discover them simply by the microscope; in such instances inoculation experiments may help to clear up the diagnosis. Tuberculosis can be communicated artificially to animals in many different ways, in fact, through any of the channels of access to the body—by inhalation, by feeding animals on tuberculous products, by injection into the serous cavities beneath the skin, into the anterior chamber of the eye, or into veins. When tuberculous urine is injected subcutaneously into guinea-pigs or into rabbits it produces a typical tuberculosis within 10 or 12 days. The local swelling may break down, caseate, and ulcerate, while the lymphatic glands related to the part become enlarged and firm and after a time may also caseate, and the disease passes on to another group. When injected into the peritoneal cavity it produces an extensive tuberculous infiltration of the omentum and acute tuberculous peritonitis. Normal urine when aseptic becomes absorbed without producing any evil effect or when septic it may produce a suppurative peritonitis. If, however, the experiment is performed with care healthy urine produces a negative result, but if the urine contains tubercle bacilli or their spores, acute miliary tuberculosis is developed in the course of a few weeks when the injection is made into the peritoneum, or if the urine is placed underneath the skin a hard tuberculous nodule is formed.

Besides the detection of the tubercle bacillus it is necessary to determine whether the disease is on one or on both sides. I have several times had occasion to examine by ureteral catheterisation cases of tuberculous pyelitis in which it was considered of importance to determine the extent to which the disease had involved one or both kidneys. Catheterisation can only determine the organ to which the tuberculous disease is limited; it cannot indicate the extent of the tuberculous lesion in the affected organ, but to make sure that one kidney is free from disease is a point of importance. The first time the writer succeeded in doing this was in 1886, when a case was examined and it was clearly shown that the tuberculous lesion was limited to one kidney.

Glasgow.

DIPHTHERITIC PARALYSIS IN CASES TREATED WITH ANTITOXIN.

BY F. J. WOOLLACOTT, M.A., M.D. OXON., D.P.H.,
SENIOR ASSISTANT MEDICAL OFFICER AT THE EASTERN FEVER HOSPITAL, HOMERTON.

THE use of antitoxic serum in the treatment of diphtheria has up to the present time in the London fever hospitals had two main results—the death-rate has fallen while the paralysis rate has risen. In the hospitals of the Metropolitan Asylums Board the former has been reduced from 29 per cent. to 15·3 per cent., while the latter has risen from 13 per cent. to as high as 21 per cent. in 1896. This increase of paralysis is chiefly due to the fact that many more patients now recover from the primary disease and live long enough for paralysis to show itself. During the last two years, however, the occurrence of paralysis has begun to diminish in frequency. From a review of the past few years it appears probable, as I shall endeavour to show, that this is due to the more efficient use of antitoxin. Table I. comprises cases treated at the Eastern Fever Hospital, the figures being chiefly obtained from the Metropolitan Asylums Board reports.

Of the nine fatal cases of paralysis during 1895 only four had previously received antitoxin, while in the following years all the 22 fatal cases had been injected. Examination of Table I. shows that in 1895, the first year in which antitoxin was largely used, its life-saving influence began to make itself felt, but at the same time paralysis became more frequent. In 1896 the average dose of antitoxin was increased and a larger proportion of patients received the treatment. The death-rate fell considerably and the paralysis rate rose. In 1897 the former remained about the same but there was a marked decrease of paralysis, a decrease more than maintained in the following year. The cause of this is worth investigation. Apparently it was not due to a change in the type of disease, for the death-rate remained about the same. Nor was it due to the fact that the patients remained under observation for a shorter time than before, or that their age grouping had altered, or that there was an increase in the number of so-called "bacteriological" cases of diphtheria. I have examined these points in some detail and I find that little or no change has occurred. On the whole, however, the cases came somewhat earlier under treatment in 1897 than in 1896, but the absence of a definite fall in the mortality shows that this factor was not of much importance. Two points remain for consideration—(1) the proportion of cases treated with antitoxin and (2) the dose of antitoxin. It will be noticed from Table I that a far larger proportion of patients received the serum treatment in 1897 than in 1896. This alone, though possibly of some influence, will not account for the decrease of paralysis. Of the 158 non-antitoxin cases in 1896 only 17, or 10·7 per cent., became paralysed, so that even if antitoxin had prevented paralysis in every one of these cases the total rate would still be 18·8 per cent.—*i.e.*, considerably higher than in the following year. Finally, the dose of antitoxin must be considered.

TABLE I.—*Cases of Diphtheria at the Eastern Fever Hospital.*

Years.	All completed cases.	Cases treated with antitoxin.	All paralysis cases.	Percentage of paralysis.	Deaths from paralysis.	Percentage of deaths from paralysis.	Total mortality per cent.
1892, 1893, and 1894	1523	—	174	11·4	19	1·24	33 8
1895	641	276	103	16·0	9	1·40	25 5
1896	633	475	136	21·5	9	1·42	17·3
1897*	1060	980	161	15·1	6	0·56	17 2
1898	1301	1280	164	12 6	7	0 53	15·9

* The increase in numbers during the year was due to the fact that more accommodation was provided for cases of diphtheria.

Towards the end of 1896 and in the succeeding years antitoxin was administered in larger doses than before. The effect of this would become apparent in the 1897 group of cases—i.e., the cases of patients who left the hospital in that year. It is true that large doses had frequently been given before, but small ones—e.g., 1500 or 2000 units—were common. The change of which I speak was a systematic increase in the minimum dose. In the early part of 1897 the minimum dose was 3000 units; later it rose to 4000 units, at which it still remains. However mild the case this was the dose, no attempt being made to reduce it because the symptoms of diphtheria appeared to be slight. Severe cases, of course, as previously, received larger doses. It is to this systematic use of a comparatively large dose that, I believe, the fall in the paralysis rate is to be chiefly attributed. The one coincided so exactly with the other that in the absence of proof to the contrary it seems reasonable to regard them as standing in the relation of cause and effect. In 1898 the minimum dose was always 4000 units and practically all patients were injected, and in this year there was (see Table I.) still less paralysis. Whether a further increase of the dose be advisable it is difficult to say. When speaking of "dose" I mean the initial dose, as this is by far the most important one. It should be mentioned, however, that during 1897 and 1898 secondary doses were larger and quite as common as formerly.

There is no doubt that differences of opinion may exist in the diagnosis of loss of power following diphtheria or that many of the slighter forms of paralysis may escape notice unless carefully looked for. This source of error, however, is eliminated if we consider only the fatal cases. A reference to Table I. shows that during 1897 the mortality directly due to paralysis was less than half of that which it had previously been. Thus during the large-dose period paralysis was less fatal as well as less frequent. The above conclusions are based entirely on results obtained at the Eastern Fever Hospital. In some hospitals the paralysis rate still remains high, although on the whole in the Metropolitan Asylums Board hospitals it has shown a tendency to fall. The dosage, the proportion of cases treated with antitoxin, and other factors vary so much in different hospitals

that probably the only satisfactory method of comparison is to examine in detail the results obtained from year to year under similar conditions at the same hospital.

Although the value of antitoxin is now generally admitted wide differences of opinion still exist as regards dosage. On the one hand, very large doses are advocated in the belief that as an unknown amount of poison has been absorbed it is desirable to give a maximum dose of the antidote, especially as large doses are as harmless as small ones. On the other hand, the expense of the remedy and the painful method of its administration are strong reasons for reducing the dose to the lowest point consistent with efficiency, while it is obvious that no amount of antidote is of much use after the poison has produced changes in the tissues. Theoretically the dose should be regulated by the length of time the disease has lasted, a small dose being sufficient in the early stage. A practical objection, however, is that it is often difficult, and sometimes impossible, especially in children, to determine with accuracy when the attack of diphtheria began, so that the problem to be solved really is what is the efficient minimum dose for the average case. To answer this question the paralysis rate should be studied as much as the death-rate, since an efficient dose should not only save life but prevent complications. For the reasons given above I think that 4000 units should be the ordinary minimum dose. Larger doses are undoubtedly useful in the more serious cases, but from 8000 to 12,000 units should be the limit.

Apart from the question of dosage the true value of antitoxin, both as regards death and paralysis, is best appreciated by noting how its influence varies according to the day of disease on which it was first injected. An analysis of some thousands of cases establishes the fact that the earlier it is given the greater is its value in both respects. If given within 24 hours the death-rate almost vanishes, while paralysis becomes infrequent and of a much less dangerous character. Further—and here we observe a great difference from pre-antitoxin years—paralysis is now particularly prone to follow severe diphtheria. This of course is an indirect consequence of the fact that so many patients the subjects of severe diphtheria are now saved by antitoxin. Formerly they would have died; now life is saved, but convalescence is hampered by paralysis. As in former years, the rule still holds that the more severe and dangerous forms of paralysis are usually associated with severe primary disease.[1]

Finally, the life-saving influence of antitoxin has been chiefly seen in the young. More survive the primary disease and the proportionate incidence of paralysis on youth has consequently become more marked. This contrast is seen in the following table:—

TABLE II.—*Showing the Influence of Age.*

—	Non-antitoxin cases[2] (Eastern Fever Hospital, 1892 and 1893).				Antitoxin period (Eastern Fever Hospital, 1897).			
	Total cases.	Paralysis cases.	Percentage of paralysis.	Deaths from paralysis.	Total cases.	Paralysis cases.	Percentage of paralysis.	Deaths from paralysis.
Under 10 years ...	780	96	12·3	12	849	144	16·9	6
10 years and over	291	29	9·9	1	211	22	10·4	0
Total	1071	125	11·6	13	1060	166[3]	15·6	6

Of the 1060 cases during 1897 all but 80 received antitoxin; 10 of the latter developed paralysis, nine being under the age of 10 years and only one being older. Table II. shows that formerly, as now, paralysis was more common and more fatal in youth but that since the introduction of antitoxin this difference has increased.

In view of these modifications in the course of diphtheria wrought by antitoxin I have thought it worth while to inquire whether the type of paralysis has undergone any change. Are the same muscles affected as formerly? Are they attacked with the same relative frequency? Is the time of onset and duration of paralysis in any way different or has its severity altered? For this purpose I have analysed a series of 472 cases of paralysis occurring during the years 1895–98 inclusive at the Eastern Fever Hospital. In each of these cases the primary diphtheria had been treated with antitoxin.

The muscular structures paralysed will be first considered. The soft palate was paralysed in 413 cases, in 178 of which it suffered alone, while in the remainder other muscles were involved. As a rule, the loss of power involved all the muscles of the palate at once, but at times it was confined almost entirely to one side and in a few instances one part was attacked as another part was recovering. The motor paralysis was usually preceded by anæsthesia and loss of reflex. The first symptom was often regurgitation per nares followed in a short time by the development of a nasal voice, &c. As a rule, regurgitation is not troublesome after the first day or two, although the palatal weakness may increase. Possibly it was originally largely due to the loss of sensation and sensory reflex and the patient, after the first surprise, is able to compensate for this by extra caution while taking food. The pharynx was attacked 91 times. Under this heading I include all cases in which deglutition was difficult or impossible or in which food showed a tendency to enter the air-passages. In some of these cases the œsophagus also was probably more or less weakened. Only once was there absence of associated palate paralysis. Strabismus occurred in 104 cases, in the great majority of which the muscle at fault was the external rectus. The left rectus suffered far more often than the right, while at times both muscles were involved. Occasionally diplopia was present. In 17 cases the strabismus was the only sign of paralysis. As a rule, it was of comparatively late onset. I am inclined to think that all of these cases cannot be attributed to diphtheria. Squint is so common in children that it is highly probable that occasionally it may first manifest itself shortly after an attack of diphtheria although due to quite a different cause. Ptosis was noticed in only six of the cases, in one of which it was bilateral. Ciliary paralysis was observed 66 times. In 10 cases no other muscle was affected. I believe these numbers to be much too small. A large majority of the patients were young children in whom weakness of accommodation might pass unnoticed. Weakness of one or more of the facial muscles was noted in 21 cases, in two of which it formed part of a hemiplegia. In all cases the paralysis was slight and involved the lower part of the face only. The laryngeal muscles showed signs of paralysis in 51 cases. In 48 there was adductor or general weakness while in only three did the abductors of the vocal cords alone appear to be at fault. The legs were paralysed in 125 cases and the arms in 51 cases, whilst in 55 cases there was marked loss of power in the muscles of the trunk, usually involving the neck and back, and at times the muscles of the abdomen. The diaphragm was paralysed 47 times. In five of these cases there was considerable weakness also of the intercostal muscles. Only once was there grave weakness of the latter without obvious loss of power in the diaphragm. Sphincter paralysis was noted only three times. To facilitate a comparison of these results with those obtained before antitoxin was known Table III. will be found convenient.

On the whole, the differences, allowing for the difference in the total numbers, are small. What were formerly common forms of paralysis remain common, while rare forms remain rare. There are, however, three noticeable exceptions—viz., the face, the limbs, and the ciliary muscles. The first of these is, I believe, quite accidental, as all the cases of facial paralysis in my series were very slight and possibly were previously overlooked. The two other exceptions can to some extent be accounted for by the increased incidence of paralysis on the young. Loss of power, as a general rule, is more difficult of detection in children than in adults. This is particularly true when the loss of power leads only to weakness and not to actual loss of some function. It will be seen on reference to Table III. that in cases when paralysis, even though slight, causes loss of some bodily function—e.g.,

[1] For proof of the above statements I must refer to a paper in the Metropolitan Asylums Board Reports for 1898 (Medical Supplement) in which I have analysed 2000 cases of diphtheria.

[2] See a paper by Dr. Goodall in Brain, Nos. lxx. and lxxi. To this paper I shall frequently refer, as Dr. Goodall's series is especially suitable for comparison with my own, all the cases having been treated at the same hospital and under the same supervision. The patients, moreover, belonged to the same social class and remained under treatment for the same length of time.

[3] Including five cases in which the patients developed paralysis after transfer to a convalescent hospital. For particulars of these I am indebted to Mr. Hume, medical superintendent of the Northern Fever Hospital.

deglutition or phonation—the relative frequency of that form of paralysis is as great as formerly. On the other hand, cases of mere weakness—e.g., in the limbs—have become comparatively less frequent or perhaps it would be more correct to say less easy to detect and therefore more often overlooked. For the same reason sensory disturbances are

TABLE III.—*Relative Frequency of the Various Forms of Paralysis.*

Part paralysed.	No antitoxin. Dr. Goodall's 125 cases. Number of times paralysed.	Antitoxin. 472 cases. Number of times paralysed.
Palate	102	413
Pharynx	19	91
Ocular muscles	26*	104*
Levator palpebræ superioris	1	6
Ciliary muscle	56	66
Facial muscles	0	21
Laryngeal adductors	11	48
Laryngeal abductors	3	3
Legs	52	125
Arms	21	51
Sphincters	0	3
Diaphragm	10	47

* Usually external rectus.

probably less noticeable than formerly. Ciliary paralysis, though causing loss of near vision, is difficult to detect in young children as it gives rise to no objective symptoms.

As regards severity, cases of paralysis may be conveniently divided into two groups. 1. Cases of a milder character, the paralysis being limited to a few muscles or groups of muscles. Of such there were 377 in my series; 24 died—21 during the first three weeks of diphtheria from the severity of the disease, two from cardiac failure on the forty-first and twenty-eighth day respectively, and one from broncho-pneumonia on the fifty-ninth day. 2. Cases of a severe character, more or less generalised or involving the muscles of respiration. Many muscles are attacked, so that in the worst cases the whole muscular system seems involved, the patient being reduced to a state of complete helplessness. 95 cases fell into this group. In 47 the diaphragm was paralysed and in one other the intercostal muscles. There were 26 deaths in all, 20 being from a combination of respiratory and cardiac failure, three from cardiac failure alone, and three from broncho-pneumonia. Many of the deaths were accelerated by want of nourishment, food not being retained either by the stomach or by the rectum.

The following table shows how these results compare with those of previous years.

TABLE IV.—*Severity of Paralysis.*

—	Total cases of paralysis.	Severe paralysis.	Deaths.
No antitoxin (Eastern Fever Hospital, 1892, 1893, and 1894)	174	31	19
Antitoxin (Eastern Fever Hospital, 1895, 1896, 1897, and 1898)	472	95	26

Under the heading "Deaths" I include the cases of all the patients who died during the course of severe paralysis. Usually the fatal result was directly due to the paralysis. Occasionally, however, dangerous complications were present. Thus of the 19 deaths in the pre-antitoxin period three[4] were complicated by cardiac thrombosis, relapse of diphtheria, and measles respectively; while of the 26 deaths in the antitoxin group three were largely due to broncho-pneumonia. From Table IV. it appears that the proportion of cases of paralysis that become severe has not varied. Both the severe and mild forms have increased to about the same extent. On the other hand, the mortality among patients suffering from paralysis has considerably diminished in the antitoxin period, so that the prognosis of the severe form is more favourable than formerly, especially as shown in Table I., since the introduction of a systematic increase in the dose of antitoxin. This improvement seems due to the fact that the tendency to fatal cardiac failure has been lessened. Paralysis of the muscles of respiration has been as dangerous as ever. Out of 10 cases of paralysis of the diaphragm in Dr. Goodall's pre-antitoxin series four were fatal. In my own series there were 49 such cases with 19 deaths. In other words, the mortality in this form of paralysis has been, and still remains, about 40 per cent.

As regards the onset and duration of paralysis the following results are obtained from 318 cases occurring at the Eastern Fever Hospital during 1897 and 1898. In the next two tables I have placed Dr. Goodall's non-antitoxin series side by side with my own.

TABLE V.—*Muscles first Affected.*

Part where paralysis first appeared.	Number of cases. Antitoxin cases.	Non-antitoxin cases.
Palate, either alone or with other muscles	252	93
Oculo-motor muscles	26	—
Pharynx	13	2
Ciliary muscle	9	29
Legs	3	3
Face	2	—
Levator palpebræ superioris	1	—
Trunk	1	1
Larynx	1	—
Respiratory muscles	—	2
Other combinations of above muscles	—	4
Not stated in notes	10	—
Totals	318	125

TABLE VI.—*The Date of the Onset of Paralysis.*

Time of onset.	Antitoxin cases.	Non-antitoxin cases.
1st week	0	2 (both on seventh day)
2nd ,,	66 (earliest on eighth day)	22
3rd ,,	78	28
4th ,,	47	22
5th ,,	56	15
6th ,,	47	8
7th ,,	14	4 (latest on forty-ninth day)
8th ,,	1	0
9th ,,	1 (on sixty-first day)	0
Not stated in notes	10	24
Totals	318	125

In some instances, without doubt, paralysis developed at later periods after the patients left the hospital. It should be stated that the minimum time during which children remained in hospital was six weeks in both series. For adults this time, after mild attacks, was reduced to four weeks. The average duration of the milder forms of paralysis (Group I.) in patients who recovered was five weeks, the extremes being one week and 15 weeks. In the severer forms (Group II.) the average duration rose to 10 weeks, the extremes being four weeks and 16 weeks. Of cases ending fatally in the latter group the average time from the onset of paralysis till death was 19 days, the minimum being four days and the maximum 39 days. The cases that did not end fatally all recovered completely.

These results agree very closely with those obtained without antitoxin. In one respect there is a slight difference. The duration is possibly a little less than before. In

[4] See Report on Antitoxin, Transactions of the Clinical Society of London, vol. xxxi.

Dr. Goodall's series the average duration was over seven weeks and in my own it was five and three-quarter weeks. This may be accidental, but whether it be so or not it is certain that cases developing paralysis after having received early injections of antitoxin remain paralysed for comparatively short periods. This might be deduced from the fact that paralysis in such cases is nearly always mild in character. Moreover, it is proved by direct calculation, the average duration in cases injected within the first 48 hours being under five weeks.

In conclusion, the influence of antitoxin on diphtheritic paralysis may be summarised as follows. Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—i.e., not less than 4000 units—of antitoxin are more effective than small ones both in preventing paralysis and in diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection it will probably be mild and of comparatively short duration. The type of paralysis has, on the whole, become less severe or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has possibly made some minor differences in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is only obtained by using it early and in efficient doses. If this be done not only is life saved but tedious complications are prevented or at least deprived of their dangerous characters.

Homerton, N.E.

A CASE OF PUERPERAL SEPTICÆMIA TREATED WITH ANTI-STREPTOCOCCIC SERUM; RECOVERY.

BY C. T. B. MAISEY, M.R.C.S. ENG., L.R.C.P. LOND.

A MARRIED woman, a primapara, aged 28 years, was delivered of a full-time female child on Feb. 7th at 3 A.M. after twelve hours' labour. Apart from a slight rupture of the perineum (necessitating the insertion of one stitch) the labour was normal. For the first four days the patient progressed favourably. The temperature, the secretion of milk, and the lochia were normal and the bowels acted well on the third day. The perineum (which was examined at each visit) appeared to heal by first intention, the stitch being absorbed by the fourth day. During my visit on the fifth day (Feb. 12th) the patient complained of feeling cold and on taking her temperature I found it to be 101° F.; in other ways she appeared to be well. Her appetite was good and she slept well, but the bowels had not again acted. I ordered her to have a douche (creolin one drachm to the pint) every four hours and prescribed a mixture containing six grains of sulphate of quinine, 30 grains of sulphate of magnesia, 20 minims of diluted hydrochloric acid, and chloroform water to one ounce, hoping to find her temperature down the next day, instead of which it had increased to 103° by 10 A.M. There was no action of the bowels, the abdomen was tympanitic, and a small line of lymph was to be seen deposited on the new tissue joining the recently ruptured perineum. The douche was ordered every two hours night and day and the parts to be well dusted with iodoform after each douche. Fluid nourishment and half an ounce of whisky every four hours. Being unable to visit her again that day my partner (Mr. Rust) kindly visited her and washed out the uterus with 1 in 1000 perchloride solution. The lotion returned almost unaltered, the lochia and the milk were scanty, and the temperature at 3.30 P.M. was 103·8°. On the 14th the temperature at 10 A.M. was 104° and the pulse was 96. The patient was very restless, sick, and perspiring freely. The abdomen was much distended, more lymph was deposited on the perineum, inside and out, and the perineum was breaking down. I obtained the husband's consent to try the anti-streptococcic serum and soon obtained a supply. The first injection of 16 cubic centimetres was given at 2 P.M. on the same day, the temperature being 104° and the pulse 96. On visiting the patient at 9 P.M., seven hours after the injection, she volunteered the statement that she felt much better; her sickness had stopped and her temperature had fallen to 102°. On the 15th the temperature at 10.15 A.M. was 101°, the pulse was 84, and the perineum was broken down but the lymph was disappearing. A second injection of 10 cubic centimetres was given at 10.30 A.M. The temperature at 9 P.M. was 100°, the pulse was 82, and the patient was feeling better. On the 16th the temperature at 10.30 A.M. was 99·5° when a third injection of 10 cubic centimetres was given. The patient jumped out of bed in the afternoon delirious and on visiting her in the evening at 9 P.M. I found her very restless and inclined to be maniacal, so I gave her a chloral draught which produced seven hours' good sleep. The temperature was 99°. On Feb. 17th, the tenth day of confinement and the third from the first injection, I found the patient's temperature and pulse to be normal. She was taking food and she felt well, the perineum was granulating, and all the lymph had disappeared. The source of the infection was a great puzzle to me, as strict antiseptic precautions were used both at the time of delivery and afterwards. The perineum was sutured with carbolised gut and a hot douche of 1 in 1000 of perchloride was given after the application of the stitch and the parts were well washed with a solution of the same strength at the time. Afterwards the nurse washed the patient six times a day with a creolin lotion (one drachm to the pint), a fresh clean rag being used each time and an antiseptic powder being dusted on the perineum after each washing. The bed and the patient's linen were changed often, a plentiful supply of clean napkins was provided, and the room was well ventilated daily. I could not solve the mystery for a few days. In all the other cases in which the same instruments had been used and self attended the patients were doing well, so I turned my attention to the nurse who was a "friend of the family," and who appeared to be a very clean, conscientious, attentive woman and who worked splendidly throughout this terrible illness. I examined the nurse and found that she had a slight discharge of pus from the nose for which she usually used an antiseptic douche, but had been unable to do so during her attendance on the patient. This appeared to me to solve the puzzle. The infection had not taken place, I think, at the time of delivery or the perineum would not have healed by first intention and the fever would have appeared earlier; but the patient was infected later, during the nurse's ablution of the parts, the streptococci finding a very suitable medium in the newly-formed tissue joining the ruptured perineum. I am sorry that a cultivation was not taken, but the cause of the patient's illness can hardly be doubted, seeing how admirably the serum answered in this case when the patient was rapidly nearing the end under antiseptic, antipyretic, purgative, and stimulant treatment. I have reported this case for two reasons: (1) the interesting and puzzling source from which infection appears to have taken place; and (2) being a comparatively new treatment I think it to be a duty to record either failures or successes under its use, and this case may, I think, be considered to be one of the brilliant successes.

Manchester.

SEQUEL TO A CASE OF DIABETIC COMA SUCCESSFULLY TREATED BY SALINE TRANSFUSION; DEATH 243 DAYS AFTERWARDS FROM COMA.

BY THOMAS OLIVER, M.A. DURH., M.D. GLASG., F.R.C.P. LOND.,
PHYSICIAN TO THE NEWCASTLE-UPON-TYNE ROYAL INFIRMARY.

IN a former number of THE LANCET[1] I reported the case of a diabetic patient who was admitted into the Newcastle-upon-Tyne Royal Infirmary in a state of coma for which he was successfully transfused. Previously to detailing the remainder of the story I shall briefly enumerate a few of the salient points of the illness. The patient, who was a coal-miner, aged 30 years, was admitted into the infirmary under my care for the first time on June 25th, 1898, suffering from diabetes of eight months'

[1] THE LANCET, August 13th, 1898, p. 401.

duration. He had developed rather rapidly polydipsia and polyuria. In a few months he lost 4 st. in weight. The urine contained a large quantity of sugar. Knee-jerks were absent. There had been gradual loss of strength and emaciation had been quickly progressing. On July 12th, after having been treated by codeia and by dieting, the patient, feeling much better, left the infirmary with the intention of going home—a distance of 14 miles by rail. That evening he was found instead in a railway carriage at Tynemouth, on an entirely different line to that by which he ought to have travelled, in a state of deep unconsciousness. In this condition he was received into the Newcastle-on-Tyne Royal Infirmary. My house physician, Dr. W. H. Rowell, recognising his former patient, at once tranfused him with two and a half pints of saline solution (one drachm of chloride of sodium to one pint of boiled distilled water, allowed to cool down to 112° F.), passing the fluid slowly into the right median basilic vein. A purge was also administered. By degrees consciousness was regained. For the first day or two after the transfusion only a very small quantity of urine was passed (21 ounces), free from albumin and acetone but rich in sugar. In a few days after this the daily discharge of urine was 190 ounces. At this time the patient's skin, especially that of the hands, was very bronzed.

In my former report of this case I made the remark that not only had the patient been rescued from a condition which in all probability would have been fatal, but he was so restored that were he a wealthy man with a will to make or a business to dispose of he would in his present state of health be able to accomplish this. For some time after leaving the infirmary on the second occasion the patient kept remarkably well for a diabetic person. He was unable to return to his employment as the work was too heavy for him, but on the whole life was fairly enjoyable. He walked about without experiencing any sense of undue fatigue and in local matters he found much to interest himself.

I saw him last on Feb. 15th, 1899. His thirst then was not so great as when he was in the infirmary. He was passing on an average five quarts of urine in 24 hours. There was decided incoördination in his walk. Staggering was exaggerated on closing his eyes and he swayed more, he told me, on going up an incline than when he was on a level road. His eye-sight was good. Knee-jerks were absent. His finger-nails exhibited an appearance not unlike that observed in some forms of tinea. The nails of the right middle and left ring fingers were lifted upwards a considerable distance from the matrix and they kept dying at their distal extremity. There could be seen and felt under the elevated nails a hard, warty-looking tissue. In its development the growth was painless, but it was painful if he tried to cut it or accidentally knocked the nail against anything. The grasp of the hands was very deficient. There was no paralysis of the extensors or flexors of the wrists or fingers but there was considerable loss of power in flexing the thumbs owing to atrophy of the thenar muscles. Sensation was unimpaired. His saliva was acid. The specific gravity of the urine was 1038; it contained no albumin, but some sugar was present. When he left the infirmary in 1898 his weight was 11 st. 9 lb.; in February of this year it was 12 st. 2½ lb. As I had not heard or seen anything of the patient for the last few months I wrote to his local medical adviser (Mr. Ingram-Johnson of South Moor) for information and the following was the reply: "I am sorry to tell you that the patient is dead. He died on March 12th. An attack of coma came on and he died two hours after its onset. He had been fairly well for some time, but for 24 hours before the commencement of the attack he had felt sick and not inclined to move about. His urine two or three days before his death had a specific gravity of 1035."

There are physicians who do not believe in transfusing with saline solution diabetic patients who are suffering from coma, but here is the case of a patient who lived 243 days after the operation and who died at a lengthened interval after the transfusion apparently from diabetic coma in the short space of two hours. I do not know what is the longest period a diabetic patient attacked with coma has survived transfusion. It would be interesting to know this, and with the object of eliciting this information I have thought it worth while publishing the above case.

Newcastle-upon-Tyne.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF NARCOLEPSY.

By JOHN McGEE MACCORMAC, M.D. DURH.,
HONORARY PHYSICIAN TO THE VICTORIA HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, BELFAST.

As classical cases of narcolepsy are rare I think the following one is of interest, more especially since a definite "exciting cause" seems to have existed.

The patient was a woman, aged 27 years, who came to the Victoria Hospital for Diseases of the Nervous System, Belfast, on June 1st, 1898, when the following history was obtained. Her parents and brothers and sisters were all healthy. She was a weaver by occupation and lived in the country until 11 years ago and enjoyed good health up to about four years ago when she had 10 teeth extracted at one sitting and without an anæsthetic. Immediately after this operation she commenced to feel unusually sleepy in the evenings and soon afterwards she began to sleep at her work, the sleep generally lasting from three to 10 minutes at a time and sometimes longer unless awakened. This sleep would overcome her under the most varied circumstances and she found herself quite unable to prevent it. Between the attacks of sleep, which came on without warning, she felt quite clear, but complained of being more easily tired than was natural. For some months after the extraction of the teeth she suffered from lightness in the head with peculiar sensations passing over it from front to back, but these symptoms afterwards entirely disappeared. On examination of the patient all the organs of the body were apparently healthy. She seemed to be mentally and physically lethargic and walked slowly and with a slight stoop. She had a heavy and rather sad expression and her features were somewhat puffy. She slept from seven to eight hours each night.

The following notes were afterwards taken. In March, 1899, it was recorded that the patient had steadily improved, especially during the last six months, the sleeping attacks having decreased from about 12 or more a day to one, and sometimes there was perfect freedom from them for one, two, or even three days. She looked brighter and her expression was more natural. In May the entry was to the effect that the patient had not attended the hospital for some weeks and that the sleeping attacks had again become much more frequent. Since the date of the last notes she had lost her father and had had other worries. In June it was found that she was once more much improved. The medicines which seemed to act best were phosphate of iron, sulphate of quinine, tincture of nux vomica, and nitro-glycerine. Galvanism was applied three or four times a week, a current of one milliampère being allowed to flow through the head from before backwards for three minutes at a time. Nutritious and easily digestible diet was ordered, with moderate exercise and as much fresh air as possible.

I think that the above case is a typical one of narcolepsy as evidenced by the persistent tendency to fall asleep 12 or 14 times daily, by the ease with which the patient was awakened, and by the complete consciousness during the intervals. No symptoms pointing to hysteria or epilepsy were present and the attacks of sleep resembled in all respects "natural sleep," the face remaining unaltered in colour, the sleep lasting for several minutes and often longer, and the patient being quite easily awakened into complete consciousness.

Belfast.

A CASE OF ACUTE APPENDICITIS WITH UNUSUAL COMPLICATIONS.

By H. R. FORSTER TOWNE, M.R.C.S.ENG., L.R.C.P.LOND.

ON May 15th, 1898, I was called to see a man who was suffering from severe pains in the abdomen. The previous history of the case was interesting. For "several" years he had suffered from chronic diarrhœa, the evacuations numbering on some occasions as many as 20 in the 24 hours.

About 10 years previously he had had pneumonia and also "something the matter with his heart," and he had always been delicate from childhood.

The patient was a married man, well-built, but rather emaciated. On my arrival I found that he was suffering from most acute pain which he referred to the umbilicus. The pain was griping in character and was continuous, but with periods of greater intensity than others. On examination the abdomen was rigid and universally tender, but especially so in the right iliac region. His countenance was anxious, his temperature was 101·5° F., and his pulse was 110 and feeble. His bowels had been confined for 48 hours, but a large quantity of flatus had been passed. To ease the pain I gave him a hypodermic injection of half a grain of sulphate of morphia which was repeated four times in the course of an hour and somewhat diminished the pain. He was then ordered tincture of opium in doses of half a drachm every half an hour if necessary and this he continued to take throughout the night and the following day. An enema of soap-and-water was followed by two large evacuations which were yellow in colour and rather thin. On May 17th the pain suddenly diminished and I could then feel a lump of the size of a small orange situated in the right iliac spine. This lump was hard and exceedingly tender. At the same time he complained of pain in his back which was aggravated by a short hard cough. On examination there was found to be at the base of the left lung a patch of impaired resonance two fingers' breadth in extent and a friction rub was heard. The pain in the abdomen being considerably better the tincture of opium was omitted and a mixture of carbonate of ammonia and squills was substituted. On the morning of the 18th the signs in the left pleura had cleared up, but at the angle of the scapula on the right side there were impaired resonance and a friction rub. On the 19th the condition was the same as regards the right side of the chest and the abdomen, but there was also a pericardial friction rub without any increase of the præcordial area of dulness. In the evening he had two natural motions which were also yellow and loose. On the 20th all the physical signs in the chest were less evident and the lump in the iliac fossa was smaller and less tender. From this date the patient steadily improved and he was allowed out of bed for the first time on the 25th. Unfortunately, however, he had a relapse on the 28th with return of all the symptoms in the abdomen with again right pleuritis and pericarditis. On June 1st he took a turn for the better, and from this date he rapidly improved and returned to his farm on the 21st.

This case is of interest from several points of view. First, the rare complications of pleuritis and pericarditis which returned with the relapse; and, secondly, the most acute agony which the patient suffered and which was only relieved by very large doses of opium. In 24 hours he had four grains of sulphate of morphia by hypodermic injection and 12 drachms of tincture of opium without producing any untoward symptoms. I may add that an operation was suggested but was refused by the patient and his relatives.

Lady Grey, Aliwal North, South Africa.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE: VACANCIES IN THE ROYAL ARMY MEDICAL CORPS (WITHOUT EXAMINATION).—The Secretary of State for War having been pleased to avail himself of powers conferred by Article 350 of the Royal Warrant for the filling up of vacancies in the Royal Army Medical Corps from such qualified candidates as may be proposed by certain of the governing bodies of public schools of medicine, and Lord Lansdowne having offered one nomination to students of the University of Durham College of Medicine, candidates desirous of obtaining a commission are requested to send their names to the secretary of the College as early as possible and the council of the College will subsequently forward to the Secretary of State the name of the gentleman they consider best qualified and fitted to fill the position. Candidates must be 21 years and not over 28 years of age and must possess two diplomas, one to practise medicine and the other surgery. The gentleman selected will be required to attend at No. 18, Victoria-street, London, S.W., to undergo the physical examination and if successful he will be instructed to report himself at Netley on Oct. 2nd, 1899, to undergo the usual course of instruction. Further particulars may be obtained at the College office.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NORTH-WEST LONDON HOSPITAL.

A CASE OF CONGENITAL ATRESIA OF THE BOWEL.

(Under the care of Mr. J. JACKSON CLARKE.)

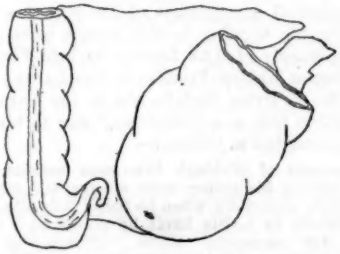
MALFORMATIONS of the small intestine are rarer than those of the large bowel and in the majority of cases they are attributable to the vitelline duct. In the normal arrangement the tendency to obliteration is sufficient to close the duct; if less than this, a Meckel's diverticulum is left; if more the intestine is constricted or its continuity is completely interrupted. Hudson's classification[1] of these malformations is convenient. Some similar cases are described by Sutton.[2]

The patient, an infant, three days old, was deeply jaundiced and was constantly vomiting meconium-like material. The vomiting was said to have begun shortly after birth and to have continued without intermission. The abdomen was tense and distended, especially in front. In each half of the scrotum there was a tense swelling that had the characters of a hydrocele. The contents of each hydrocele were of a dark brown hue as seen by transmitted light. On the left side the hydrocele could be completely reduced, whilst that on the right was not completely reducible. When the fluid part had been returned into the abdomen a small mass could still be felt opposite the external abdominal ring. On passing a finger into the rectum a strand of tough white mucus came away. The provisional diagnosis was that there was probably some unusual form of hernia combined with a congenital blocking of the bile-ducts. The patient was obviously distressed and exhaustion was marked and increasing. Mr. Jackson Clarke decided to cut down on the right inguinal swelling. This was done, Mr. M. C. Hayward giving the anæsthetic and Mr. MacCullagh assisting in the operation. On opening the tunica vaginalis two ounces of dark reddish-brown thin fluid escaped at once and a similar fluid continued to escape from an irregular orifice in what looked like a small knuckle of bowel which projected into the tunica vaginalis opposite the external abdominal ring. In the fluid were suspended yellow bodies precisely like vermicelli. On investigating what Mr. Clarke thought was the knuckle of bowel its serous coat was seen to be continuous with the tunica vaginalis. At various parts the vermicelli-like bodies were adherent to the serous aspect of the tunica vaginalis and had become partly calcified. The nature of the case was not yet clear, but the condition of the child made it undesirable to perform laparotomy. Mr. Clarke simply enlarged the opening in the pseudo-hernia and applied carbolic fomentations (1 in 40) to the wound. From the latter much of the brown liquid continued to escape during the few hours the patient survived; the vomiting also continued unrelieved.

Necropsy.—With the assistance of Mr. MacCullagh a post-mortem examination was made by Mr. Clarke. On opening the abdomen the whole of the small intestine was seen to be greatly distended and its coils were matted together by firm lymph, about and within which were numerous clumps of the vermicelli-like material. The small intestine ended blindly close to the left side of the cæcum. At the free end of the ileum there was a minute opening with sloughy edges and on making pressure upon the distended bowel worm-like spirals of meconium escaped into the peritoneum. A free border of mesentery stretched from the end of the ileum to the back of the colon. The latter was contracted and contained only a little thick white mucus.

[1] Transactions of the Pathological Society of London, 1889, vol. xl., p. 98.
[2] International Journal of the Medical Sciences, 1889, p. 457.

The vermiform process was present and well formed. The nature of the case was now clear. There was congenital interruption of continuity in the bowel at the lower end of the small gut. The latter, probably during parturition, had become perforated. The meconium escaped into the peritoneum in worm-like spirals and set up peritonitis. In the effused fluid the spirals of meconium became bleached from the bile entering into solution; hence the vermicelli-like bodies and the icterus. On the left side the peritoneal fluid had entered a congenital hydrocele; on the right side the separation of the tunica vaginalis from the peritoneum had been begun and the force of the intraperitoneal tension invaginated the upper part of the tunica vaginalis over a hernia sac containing fluid and infantile fæces. The tension ruptured both sac and tunica vaginalis, forming a communication between the peritoneal cavity and the right tunica vaginalis. The unfortunate patient had been voiding fæces directly into the peritoneum and indirectly into the tunicæ vaginales. The illustration represents roughly the abnormal condition of the intestine. The parts concerned were removed and placed in formalin solution, but unfortunately in the hot weather they were allowed to become dry and were spoiled.



The dilated portion of the ileum and the empty cæcum and part of the ascending colon are indicated in outline. There is a minute perforation at the lower end of the ileum.

Remarks by Mr. CLARKE.—Partial or complete interruptions of the bowel from developmental errors are not uncommon in the rectum and anus and are not rare at the point of attachment of Meckel's diverticulum. They are known in the neighbourhood of the point of entry of the common bile-duct into the duodenum. I have not before seen an instance of the defect described above.

BRISTOL GENERAL HOSPITAL.

A CASE OF PRIMARY SARCOMA OF THE THYROID; THYROIDECTOMY; RELIEF OF SYMPTOMS.

(Under the care of Dr. J. LACY FIRTH.)

THE frequency of sarcoma of the thyroid is probably greater than the statistics would appear to show, for it is only very rarely that operative procedures are undertaken for the treatment of this disease. The relative frequency of carcinoma and sarcoma may be gauged from Kauffmann's statistics, which give 23 cases of carcinoma to seven of sarcoma. In sarcoma of the thyroid the lymphatic glands are usually involved, and this occurred in the case recorded below. The dysphagia which was a prominent feature in Dr. Lacy Firth's case is always very suggestive of the malignancy of a goitre. Local anæsthesia for thyroidectomy is especially useful in cases where there is urgent dyspnœa.

A woman, aged 69 years, attended at the Bristol General Hospital complaining of a swelling in the front and sides of the neck, of difficulty in swallowing, of a sense of tightness across the neck "as if an elastic band were there," of a nasty accumulation of phlegm in the throat, of sensations as of "something rising in the throat," and of attacks of difficulty in breathing. She stated that if she lay down in bed for 10 minutes she had then suddenly to sit up again because there was an obstruction to breathing in the throat. She had therefore given up lying down and sat propped up in bed all night. The swelling had been first noticed three months previously, but for three months before that she had had the sight feeling as of a band round the neck. This feeling from the first was much increased if she raised her arms for long for any purpose, as in combing her hair. It seemed as if raising her arms "drove all the blood to her face." The size of her neck, as measured by her daughter, had increased from 15 to 18 inches in three months. She had a cough, due, she thought, to accumulation of phlegm in the throat, and she had much difficulty in bringing up this phlegm. No loss of flesh had been noticed. She was the mother of 14 children and had enjoyed excellent health except for a rheumatic attack six years before.

The patient was a short and stout woman and carried her head somewhat thrown backwards, with the chin elevated. She could not comfortably bend forwards because it increased the sense of pressure in the neck. For this reason all sewing had been given up. For a fortnight she had only been able to take soft solid food and liquids; before that she had been able to take solids. Her appetite was good, but she could not swallow enough to appease it. Her voice was husky, but there was no stridor. The lower half of the neck was greatly bulged in front and at the sides. This was from the presence of a large mass having the position and general shape of an enlarged thyroid. The lateral lobes extended well behind the sterno-mastoids and vertically from the clavicles to the level of the angles of the jaw. The tracheal rings could not be felt owing to the swelling which lay in front of them, the enlarged thyroid isthmus, which extended from the cricoid to the top of the sternum. The tumour was very fixed and did not appreciably rise and fall with swallowing. Behind the right lateral lobe there were three firm smooth bodies, each of the size of a filbert and somewhat moveable but attached to the main mass. These seemed clearly to be enlarged lymphatic glands. A similar body was felt behind the left lobe. The lateral mass in the right side was sub-fluctuant and was at a later period explored with a needle and syringe, blood only being removed. A medium-sized bougie could be passed easily down the œsophagus.

A diagnosis of malignant disease of the thyroid was made, based upon the rapid growth of the swelling, its fixity, and the affection of lymph-glands. The patient was admitted into the hospital and remained in a few days. She declined to have any operation performed after full consideration, the possible advantages and dangers of the meditated operation (thyroidectomy) having been explained to her. A week after her discharge she came back again to the hospital and begged to be re-admitted and to have something done, for she had had two more severe attacks of dyspnœa at home in the night and had been nearly suffocated in the attacks and had had to send for the medical man each time. She was taken in again. The tumour seemed to be a little larger. For a week she was watched but had no serious attack of dyspnœa during that time. After a consultation and much deliberation Dr. J. Lacy Firth resolved to attempt to relieve the pressure on the trachea by removing the right lobe of the thyroid. He had no hope of being able to completely remove the gland and growth together with the affected lymph glands. It was doubtful how the anæsthetic would be taken. It appeared to him, however, to be justifiable from the patient's point of view to run considerable risk in an attempt to prevent a recurrence of the distressing attacks of dyspnœa.

At the operation Mr. Freeman administered chloroform with happy results, the breathing continuing satisfactorily regular throughout. The tumour was exposed by an incision with a median vertical limb and an oblique one upwards and outwards from the top of that. The sterno-mastoid and sterno-hyoid and thyroid muscles had to be divided and numerous large vessels, chiefly veins, had to be ligatured. The jugular vein was almost completely surrounded by the growth and about one and a half inches of it had to be removed embedded in the growth. Then the tumour had to be peeled off the carotid artery, the œsophagus, and the trachea, to all of which it was firmly adherent. The growth extended deeply between the trachea and œsophagus and behind the latter and downwards behind the clavicle. It was not pursued far in these directions, however, for at an early stage in the proceedings it became clear that the operation at best could only be partial and palliative rather than radical. The actual division of the enlarged isthmus of the thyroid was attended with practically no hæmorrhage and no ligatures were required. The section surface was lobulated and firm and of whitish appearance and the large vessels which had to be ligatured were superficial, capsular, and subcapsular.

The operation was borne well. Some suppuration of the

wound unfortunately followed but all was healed in three weeks and at the end of four weeks the patient was discharged from the hospital and subsequently for a time attended as an out-patient. Four months after the operation the patient died. Through the kindness of Dr. C. M. Phillips, under whose care she then was, Dr. Firth had an opportunity of seeing her a day or two before her death. She appeared to be suffering chiefly from bronchitis. There were shortness and frequency of respiration but no laryngeal or tracheal obstruction was apparent. She stated that she had been free from trouble with her breathing from the time of the operation until the previous fortnight and that her power of swallowing had been much greater also. The swelling of the neck was at this time as large as it was before the operation. During the first few weeks after the thyroidectomy the left lobe of the gland, the untouched half, appeared gradually to diminish in size. This reminded Dr. Firth of the similar effects so frequently observed after division of the thyroid isthmus in non-malignant enlargements. At first he thought that this shrinkage might be only apparent and due to recession of the parts allowed for by the removal of the bulky right lobe, but he considered that it was more likely that interference with its vascular supply was the cause. Whatever the explanation the apparent diminution of the left lobe was very conspicuous in the earlier weeks after the operation, and Dr. Firth believed that shrinkage of malignant thyroid tumours after partial excisions of the gland had been observed before.

Microscopical examination of the tumour showed that the thyroid gland structures had been almost completely replaced by a mixed small round and spindle-celled growth. The bulk of the cells were of the small round type and without definite arrangement, but here and there they were interlaced by small spindle-cells running in narrow tracts. A few groups of vesicles were visible in places. Some of these still contained colloidal material and were in other respects normal in appearance. The majority of the vesicles, however, were very small and many had no central lumen, as though they had shrunk from pressure and then shaded off into solid clumps of glandular cells more or less separated up by the invasion of the smaller round cells of the growth. By far the greater part of the section showed no remaining traces of the thyroid glandular elements. A section of an affected lymph gland showed new growth of the same type. On laying open the portion of the jugular vein which had been removed the sarcoma was found to have invaded its coats and to have slightly bulged into its lumen. The presenting surface in the vessel was smooth and the endothelium was intact over it. This illustrates the well-known tendency of sarcomata to invade veins, which are often the channels by which the growth is disseminated. The projecting sarcomatous tissue ulcerates and fragments pass into the blood stream. Dr. Pitt[1] records a case in which a man with sarcoma of the thyroid died suddenly. Fragments of growth were found in the blood-clot in the right side of the heart and the sarcoma had ulcerated into the jugular vein.

Remarks by Dr. FIRTH.—Primary sarcoma of the thyroid is a rare form of new growth. Mr. Roger Williams,[2] in an analysis of the primary tumours under treatment at four large metropolitan hospitals during a period of from 10 to 15 years, found that of 7294 cancers only seven originated in the thyroid, and of 1266 sarcomas only one started in this situation. Dr. Tippany and Dr Lanier,[3] who have published a case, state that a careful search in literature only enabled them to find records of 16 cases of sarcoma of the thyroid. Of these four were doubtful. They give these cases in a tabulated form. It appears generally to occur in patients well above 40 years of age. Usually the growth is spindle-celled, but may be round-celled or mixed. Not one of the cases in the table of these writers survived the operation, undertaken usually for the relief of dyspnœa, for more than a few days. In most of the operations the trachea has been opened, which no doubt materially increases the danger. Allen[4] has recorded a case in which he removed the right lobe of the thyroid for this disease under cocaine. The operation lasted one and a half hours, the patient suffering very little, and conversing with the operator during the proceedings. Five hours later she died, apparently from shock. It is well known that Kocher frequently operates for enlarged thyroids under cocaine anæsthesia. Not having had experience of this method I had more confidence in chloroform, which was therefore used as the anæsthetic in my case. Though it seems to be very unsurgical in some respects to perform a rather hazardous operation for the purpose of removing a portion only of a mass of malignant growth, yet the end attained—viz., four months of freedom from attacks of dyspnœa—seems to have justified the means in this case. Mr. Sydney Jones and Mr. W. H. Battle[5] have placed on record a case in which the misery of a patient with this affection was considerably ameliorated by repeated operations, the first and most extensive removal of growth being performed eight months before death.

[1] Transactions of the Pathological Society of London, vol. xxviii., p. 398.
[2] Bristol Medico-Chirurgical Journal, vol. xvii., p. 86.
[3] Annals of Surgery, 1897.
[4] Ibid.
[5] St. Thomas's Hospital Reports, vol. xvii., p. 232.

Reviews and Notices of Books.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. LIX. Wakeman-Watkins. London: Smith, Elder, and Co. 1899. Pp. 459. Price 15*s*.

THE alphabetical arrangement of the work has been the means of bringing together in this volume memoirs of the founders respectively of THE LANCET and the *Times*. The article on Thomas Wakley, Founder of THE LANCET, is from the pen of Mr. E. Irving Carlyle, who in the first two lines tersely describes him as a "reformer," and in his closing paragraph summarises as follows:—

"The interests of Wakley's life were various, but the motives governing his action were always the same. He hated injustice, especially when he found it in alliance with power. Athletic in bodily habit he possessed a mind no less fitted for successful strife. Though he aroused strenuous opposition and bitter ill-will among his contemporaries time has proved his contentions in every instance of importance to be just. Some of the abuses he denounced are still in existence, but their harmfulness is acknowledged; the greater number have been swept away, chiefly through his vigorous action. He was not accustomed to handle an opponent gently and many passages in his earlier diatribes are almost scurrilous. But no feeling of personal malice entered into his controversies; he spoke or wrote solely with a view to portraying clearly injustice or wrongdoing and never with the purpose of paining or humiliating an enemy. Many who opposed him on particular questions became afterwards friends and supporters."

Our readers will recollect the biography by Dr. S. Squire Sprigge which was published serially in THE LANCET of 1896. It was subsequently reprinted in book form in "The Life and Times of Thomas Wakley," and is by Mr. Carlyle placed first on the list of his bibliographical references.

John Walter, the founder of the *Times* was born in London in 1739 and was in business as a coal merchant and underwriter from about 1755 to 1782 when he became bankrupt, but the creditors being convinced of his integrity treated him with much consideration. In 1784 he purchased the premises in Printing-house-square and entered on the business of printing by means of "logotypes," or founts composed of complete words instead of separate letters. The logographic process was not a success, although some 40 books were printed by it, and Walter started a small newspaper originally entitled the *Daily Universal Register*, of which the first number "printed logographically," was issued on Jan. 1st, 1785. This was really, though not in name, the first number of the *Times*. The 940th number, which appeared on Jan. 1st, 1788, was for the first time entitled the *Times* or *Daily Universal Register*, and the alternative title was dropped on March 18th. For his criticisms of the Prince of Wales (afterwards George IV.), three Royal dukes, and some of the nobility, Walter was at different times sentenced to pay heavy fines, to be twice imprisoned in Newgate, and to stand in the pillory. He gave

up the management of the paper in 1795 to two of his sons and died at Teddington in 1812. From 1803 his second son, also named John Walter (*b.* 1776, *d.* 1847), was sole manager of the *Times*.

Exclusive of that of Thomas Wakley, the volume contains biographies of 26 medical men and of two others who are said to have been in medical practice although their qualifications are not specified. Of the whole list only five were born during the present century. William Wasey was born in Norfolk in 1691, graduated as M.D. at Cambridge University in 1723, was admitted a Fellow of the Royal College of Physicians of London in 1724, and was President in 1750, 1751, 1752, and 1753. He was chosen physician to the Westminster Hospital on its foundation in 1719 and was subsequently physician to St. George's Hospital. He died in 1757. Sir George Wakeman, son of Edward Wakeman of the Inner Temple, acquired great notoriety during the reign of Charles II. A zealous Roman Catholic and a staunch Royalist he was educated abroad, probably in Paris, where he possibly graduated in medicine, was imprisoned by Cromwell, and was created a baronet by Charles II. in 1661. About 1670 he was appointed physician-in-ordinary to the queen (Catherine of Braganza) and in 1679 was indicted for high treason, the charge being that he had consented to poison the king for a reward of £15,000 and the post of physician-general in the army. The judge animadverted severely upon the character of the evidence and the jury found the prisoner "Not Guilty." Wakeman was in London in 1685, but nothing is known of his subsequent history. Sir William Waldegrave was probably born in Essex in 1618. He received the degree of Doctor of Medicine of Padua in 1659 and was admitted an honorary Fellow of the Royal College of Physicians of London in 1664. He was physician to the queen of James II. Joseph Warner was born in Antigua in 1717, was educated at Westminster School, and was apprenticed to Samuel Sharpe, surgeon to Guy's Hospital. In 1741 he passed his examination for the great diploma of the Barber Surgeons' Company, in the following year he became joint lecturer on anatomy at Guy's Hospital in association with Mr. Sharpe, and in 1745–46 he was elected surgeon to the hospital. In 1750 he was admitted a Fellow of the Royal Society, in 1764 he was chosen a member of the Court of Assistants of the Corporation of Surgeons, and he served as its Master in 1780 and in 1784. When the present Royal College of Surgeons of England was created in 1800 Warner became its first Member, so that he was one of the very few surgeons who belonged to the three corporate bodies of surgeons which have existed in England. He was the first surgeon to tie the common carotid artery, an operation which he performed in 1775. He died in 1801. James Wardrop was born in Linlithgowshire in 1782, studied medicine in Edinburgh, was admitted a Fellow of the Royal College of Surgeons of Edinburgh in 1804, and in 1808 removed to London, where he spent the remainder of his life. He was admitted Member of the Royal College of Surgeons of England in 1814 and a Fellow in 1843; the honorary degree of M.D. was conferred upon him by the University of St. Andrews in 1834. In 1818 he was appointed surgeon-extraordinary to the Prince Regent and after the Prince had become George IV. Wardrop was chosen to be his surgeon-in-ordinary in 1828. Circumstances which occurred during the last illness of the king showed Wardrop that he was unfairly treated by several of his medical colleagues who were attached to the court and he revenged himself by writing a series of satirical papers, entitled "Intercepted Letters," which he published anonymously in THE LANCET during 1833 and subsequent years. He took a leading part in the discussions of 1826–27 upon the state of the medical profession and he was an active supporter of the Liberal policy advocated by Thomas Wakley and Sir William Lawrence. Wardrop brought into practical use a modification of Brasdor's operation for the cure of aneurysm by distal ligature of the affected vessel, and was the first surgeon in England to remove a tumour of the lower jaw by total vertical section of the bone. He died in 1869. George Alfred Walker was born at Nottingham in 1807 and studied medicine in London, becoming qualified as L.S.A. in 1829 and M.R.C.S. Eng. in 1831. In boyhood the evils of the densely packed burial-ground in Nottingham attracted his attention and when he entered on medical practice at 101, Drury-lane, in 1836 (*1653* in the Dictionary is an obvious misprint) his surgery was surrounded by intra-mural churchyards. He not only wrote much in reference to such interments but petitioned the House of Commons, and it was largely owing to him that the Act of 1850 severely restricting intra-mural interments was passed. David Urquhart is generally credited with having introduced the Turkish bath into Great Britain, but according to the present memoir Walker had built warm vapour baths at the back of his house long before Urquhart advocated them. He died in Wales in 1884. Augustus Volney Waller was born apparently in Kent in 1816, studied medicine in Paris, where he obtained the degree of M.D. in 1840, and in the following year was admitted L.S.A. Lond. In 1851 he was elected F.R.S. From 1851 to 1856 he was in Bonn carrying on physiological investigations. In 1858 he was appointed professor of physiology in Queen's College, Birmingham, and physician to the hospital, but ill-health soon compelled him to return to the continent. He died at Geneva in 1870, leaving one son, Dr. Augustus Waller, the present lecturer on physiology at St. Mary's Hospital. Mr. D'Arcy Power in his memoir of Waller says that "the fields he first traversed have proved fruitful beyond imagination, for they have led directly to nearly all that we know experimentally of the functions of the nervous system." John Henry Walsh was born in London in 1810 and took the diplomas of M.R.C.S. Eng. in 1832 and F.R.C.S. Eng. in 1844. For several years he was in practice in Worcester but left that city for London in 1852. He rode well to hounds, kept greyhounds and entered them at coursing meetings, broke his own pointers and setters, and also trained hawks. With William Harcourt Ranking he edited the *Provincial Medical and Surgical Journal* from 1849 to 1852. In 1853 under the pseudonym of "Stonehenge," he brought out a work on "The Greyhound" which still remains the standard text-book on the subject. About 1856 he became connected with the *Field* and at the end of 1857 accepted the editorship, which he carried on for many years with conspicuous ability. He was the author of numerous published works and did much for the improvement of guns and rifles. He died at Putney in 1888. Walter Hayle Walshe was born in Dublin in 1812 and studied medicine in Paris and Edinburgh, graduating as M.D. at the latter university in 1836. In 1841 he was elected professor of morbid anatomy at University College, in 1846 Holme professor of clinical medicine and physician to University College Hospital, and in 1848 professor of the principles and practice of medicine, an office which he held till 1862. He was the author of "Physical Diagnosis of Diseases of the Lungs" and "A Practical Treatise on Diseases of the Lungs and Heart." He died in 1892. Richard Warren was born in Suffolk in 1731 and graduated as B.A. in Cambridge University in 1752. In 1759 he married the daughter of Peter Shaw, physician-in-ordinary to George II. and George III. In 1762 he graduated as M.D. at Cambridge University and in the same year he was appointed physician to George III. on the resignation of his father-in-law. Mr. D'Arcy Power, the writer of the memoir, says: "He was in receipt of a larger annual income than had been known to accrue from the practice of medicine in this country. He is said to have realised £9000 a year from the time of the regency in 1788

and he bequeathed to his family upwards of £150,000." He died in 1797.

Among the various notabilities included in this volume none are perhaps more celebrated than Izaak Walton (*b.* 1593, *d.* 1683) and Sir William Wallace (*b.* 1272 (?), *d.* 1305). Charles Vincent Walker (*b.* 1812, *d.* 1882) was in his day well known as one of the early writers on the electro-deposition of metals. His "Electrotype Manipulation" was first published in two parts in 1841; the twenty-fourth edition of the first part came out in 1850. He was author or editor of several other works on scientific subjects. Mention may also be made of Admiral Sir Provo Wallis, a centenarian who was born at Halifax, Nova Scotia, in 1791 and who died near Chichester in 1892.

LIBRARY TABLE.

Physical Training at Home. By A. ALEXANDER, F.R.G.S. London: Horace Cox. 1898. Price 2*s.*—A characteristic introduction by Lord Charles Beresford explains that this little book recommends all sorts of exercises and cautions the reader against pursuing one form of exercise to a violent excess. The exercises for defective development and the remedial movements for organic ailments are perhaps the best features; there is certainly more in the book than a casual supervision would lead one to suppose, although the illustrations are somewhat feeble.

Report on the Dharwar Plague Hospital, August 28th to Dec. 18th, 1898. By W. R. HORNABROOK, M.B., B.S. Adelaide.—During the four months covered by this report 757 patients were admitted to the Dharwar Hospital. The percentage mortality among these cases was 58·74; or, if 104 cases be omitted which had been subjected to prophylactic inoculation, 61·86. The report furnishes some interesting figures in support of the practice of inoculation for plague. Among 85 patients who had been once inoculated the percentage mortality was only 29·4, or less than one half of the mortality among all patients; while among 19 patients who had been twice inoculated the mortality was further reduced to 26·31. That treatment is not altogether, as some would appear to hold, without influence on the mortality of plague is shown by the fact that of 15 patients who refused treatment 14 died, giving a mortality of 93·33 per cent. The occurrence of six cases of plague among the servants of the hospital and of 26 cases among persons (apparently relatives) attending on plague patients lends further support to the view, now pretty well established, that attendance on patients suffering from plague is not entirely devoid of risk. The photographs which appear in this report may be interesting mementoes to the author, but they do not illustrate the text and are therefore out of place in a report of this kind.

Journal of the Sanitary Institute. Vol. XX., Part 2. July, 1899. London: Edward Stanford. Price 2*s.* 6*d.*—The three principal papers in this volume with the discussions to which their reading gave rise are well worthy of perusal. The London (Welsh) water-supply is tersely treated of by Mr. R. E. Middleton, M. Inst. C.E., and Dr. W. A. Bond's paper on the important subject of the establishment of public abattoirs in the metropolis elicited what was apparently a not altogether unanimous discussion, one of the speakers endeavouring to show that the amount of tubercle accredited by some to the consumption of tuberculous meat has been somewhat over-estimated. Miss Alice Ravenhill in her paper on the Teaching of Practical Hygiene in Elementary Schools discussed in an able manner the forces which militated against the enthusiastic acceptance of this branch of knowledge by those in authority, and her statement "that those elected on local public bodies were often ignorant" evoked considerable criticism from one of the speakers notwithstanding the obvious truth of Miss Ravenhill's statement.

Annales de Gynécologie et d'Obstétrique. Vol. LII. July, 1899. Paris: G. Steinheil.—This number contains the following original articles: 1. Some Observations upon 40 Cases of Total Abdominal Castration for Inflammation of the Appendages, by Professor Henri Hartmann. 2. A case of Acute Infection of Umbilical Origin in a Newborn Infant Cured by the Use of Hot Baths, by MM. P. Le Gendre and H. Varnier. 3. A case of Salpingo-ovaritis with Twisted Pedicle, Laparotomy, and Cure, by MM. A. Gosset and E. Reymond. 4. Abdominal Surgery in Germany, by Dr. L. Weill. 5. A case of Acute Spontaneous Inversion of the Uterus, by M. Queirel. A review is given of a paper by M. H. Lohlein upon Marked Adhesion of the Lower Pole of the Ovum as a Cause of Prolongation of the Period of Dilatation. The Conservative Treatment of Inversion of the Uterus as practised at the present day is discussed in an editorial article and the number concludes with the record of the proceedings of the Obstetrical Society of Paris and the usual bibliography.

Cultivated Roses. Edited by T. W. Sanders. London: W. and H. Collingridge. Price 2*s.* 6*d.*—It has often been said that every professional man should have a hobby outside his everyday work. There are few more delightful hobbies than gardening, and rose-growing is in a way the chief end of gardening. The little book before us, although not professing to be a complete guide to rose culture, gives quite enough information for the average amateur to grow a good selection of roses. The book is mainly a reprint of articles which have appeared in *Amateur Gardening.*

Notes on Folkestone. By ARTHUR E. LARKING, M.D. Durh. London: J. & A. Churchill. Price 1*s.* 6*d.*—The sub-title of this little book explains its scope, the notes being historical, climatological, and medical. Folkestone is an eminently popular watering-place and Dr. Larking gives in a small compass a number of facts which will be useful to the visitor. The chapter entitled "Hints on Selecting Apartments" is excellent.

JOURNALS.

Edinburgh Medical Journal.—In the opening article of the August number Dr. J. O. Affleck and Dr. D. A. Welsh describe a case of Intermittent Fever treated in the Edinburgh Royal Infirmary. The patient had been a soldier in Burmah in 1896. The development of the malarial parasite and the changes produced in it by quinine are shown in an illustration containing about 70 drawings of blood corpuscles. Professor A. Crum Brown gives an account of Dr. John Mayow who practised at Bath in the seventeenth century and wrote on the mechanism of respiration and on what would now be called the chemistry of respiration and combustion. Altogether there are six original articles.

Scottish Medical and Surgical Journal.—In the August number Dr. A. Patterson (Glasgow) gives an outline of several cases of syphilis and gonorrhœa presenting points of interest, some of them in a medico-legal sense. Dr. J. W. Struthers describes a case of chronic inversion of the uterus replaced by manipulation after posterior colpotomy had been performed.

Mercy and Truth.—In the August number Dr. Donald Carr narrates how he conveyed a wounded Persian robber chief over a mountainous region in a litter, the journey lasting more than a week.

Archives Générales de Médecine.—In the August number Dr. A. Fiquet publishes a long account of observations made on himself with a view to determine the physiological effects of the *douche-massage tempérée* practised at Aix-les-Bains. Each

douche lasts about 10 minutes, during which time massage is applied to the muscles of the limbs, neck, back, shoulders, lumbar region, gluteal region, and thighs under water at a temperature of from 93° to 95°F. These douches were taken in series of 20 each on three different occasions and elaborate daily analyses of the urine were made, the food ingested being constant in nature and quantity. The increase of the total solid residue of the urine showed that metabolism was encouraged and the increase of the inorganic residue relatively to the total residue ("co-efficient of demineralisation") helped to explain why the treatment at Aix-les-Bains was beneficial to arthritic patients but injurious to the tuberculous. There seemed to be evidence of a diminished metabolism of the tissues rich in phosphorus, a part of the organism represented mainly by the nervous system. In an article 48 pages in length Dr. Émile Boix, one of the editors, reviews 86 memoirs on Diseases of the Liver which appeared between Jan. 1st, 1898, and the end of May, 1899.

Analytical Records
FROM
THE LANCET LABORATORY.

TANNOFORM (MERCK).

(AGENCY: F. BOEHM, 16, JEWRY-STREET, LONDON, E.C.)

TANNOFORM promises to supersede many other preparations as an anti-sudorific, astringent, and siccative antiseptic. It is a compound of tannin and formaldehyde which is not soluble in water or in acids but is readily soluble in alkalies. This property suggests its use also as an intestinal astringent and antiseptic because it would reach the intestinal canal unchanged. But it appears so far to have been used externally chiefly as a dusting powder in offensive perspiration, in excessive sweating, or in suppuration. It is a dry, finely divided powder, not unlike crude tannin in appearance. It is said that its application does not cause the skin to shrink. The dusting powder which we examined contained a micaceous excipient and was pleasant to employ, imparting a smooth, velvety feeling to the surface of the skin.

PROTOSE.

(THE LONDON HEALTH FOOD CO., 451, HOLLOWAY-ROAD, LONDON, N.)

Protose is a pulpy compound prepared exclusively from vegetable materials, wheat gluten, and nuts. It yields very little soluble matter to water and just traces of peptones according to the biuret test. It does not contain true proteoses and therefore its name might lead to a wrong assumption. Our analysis of protose was as follows: moisture, 64·22 per cent.; proteids, 21·30 per cent.; fat, 10·23 per cent.; mineral matter, 1·40 per cent.; carbohydrates, 2·85 per cent. Chemically, therefore, it presents the composition of animal tissue, beef or mutton. The fat exhibited a low melting point and was easily saponified so that it would probably be readily digested. The flavour of the preparation is not unpleasant and somewhat meaty. Protose is unquestionably a food of some merit, though we cannot regard it as a perfect substitute for an animal diet or as a "truly wonderful food." It may serve usefully in a special dietary.

"WHIMPLE" CIDER.

(HENRY WHITEWAY AND CO., WHIMPLE, DEVON.)

We have received six varieties of this brand of Devonshire cider. On analysis the following results were gained:—Woodbine blend: extractives, 2·92 per cent.; mineral matter, 0·27 per cent.; malic acid, 0·21 per cent.; acetic acid, 0·17 per cent.; and sugar, 1·06 per cent. Fair Maid of Devon: extractives, 6·29 per cent.; mineral matter, 0·30 per cent.; malic acid, 0·33 per cent.; acetic acid, 0·24 per cent.; and sugar, 4·10 per cent. Sweet Alfred: extractives, 6·25 per cent.; mineral matter, 0·26 per cent.; malic acid, 0·33 per cent.; acetic acid, 0·19 per cent.; and sugar, 4·24 per cent. Whimple Specialité, Extra Dry: extractives, 2·98 per cent.; mineral matter, 0·30 per cent.; malic acid, 0·30 per cent.; acetic acid, 0·30 per cent.; and sugar, 0·70 per cent. There is variety enough in the specimens we have thus selected for analysis to suit all tastes. As will be gathered from the figures relating to sugar, some specimens are sweet, some are moderately so, and others are "dry." As regards alcoholic strength the following figures give the average of the results: absolute alcohol, by weight 5·81 per cent., by volume 7·25 per cent., equal to proof spirit 12·70 per cent. Most of the samples were sound and in good condition, but to this there were a few exceptions, acetification evidently having set in. We failed to find any objectionable preservatives. Well-made cider is admittedly a good and wholesome beverage.

TABLOIDS OF CASCARA SAGRADA.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

As the result of the observation that the susceptibility of patients to the action of cascara sagrada extract varies Messrs. Burroughs, Wellcome, and Co. now prepare tabloids containing one grain and three grains respectively of the extract instead of two grains as hitherto. Thus one of the three-grain tabloids may be taken once, twice, or even thrice daily for habitual constipation until a regular action of the bowels is established, when the dose can be gradually reduced to one tabloid of one-grain strength taken once daily. In this way the assistance of a laxative may probably be dispensed with after a time. The method thus suggested is commendable.

CIGARETTES (CORK END MOUTHPIECE).

(C. CHAMP, 40, DONGOLA-ROAD, WEST GREEN, LONDON, N., AND L. DALMAR AND CO., 3, CROSS-LANE, EASTCHEAP, LONDON, E.C.)

This is a simple and convenient device which certainly renders the smoking of a cigarette cooler whilst preventing the irritating action due to the contact of tobacco with the lips. One end of the cigarette contains a small cork, the cork projecting a little way from the paper end. The cork is pierced. To some extent this device keeps back the irritating oils of tobacco smoke so that from first to last the smoke is not "hot" to the tongue.

SANITARY TOILET PAPER.

(MARLBOROUGH, GOULD, AND CO., 52, OLD BAILEY, LONDON, E.C.)

This paper is slightly impregnated with well-known and agreeably smelling antiseptic oils. It is suggested that the use of this paper will be beneficial in hæmorrhoids, but we attach little value to the novelty in this respect. The paper diffuses a very agreeable wood-tar-like smell in the air of lavatories—a point which is considerably in its favour as a sanitary adjunct.

ECTHOL (BATTLE & CO.).

(ROBERTS AND CO., 76, NEW BOND-STREET, LONDON, W.)

Ecthol is said to contain the active principles of echinacea and thuja. It is described as being indicated in all breaking-down tendencies of the fluids, tissues, and corpuscles, and where there is dyscrasia of the secretions or where blood poisoning or tissue disintegration exists. It is used also externally for sores and gives relief in insect stings, snakebites, &c. It is a brown fluid and contains, according to our analysis, glycerine and alcohol in which the active principles of the drugs are dissolved. The young shoots of arbor vitæ (thuja occidentalis) are used for making a tincture which has been employed to remove warts and fungoid granulations from ulcers, and internally for amenorrhœa, pulmonary catarrh, and worms. Echinacea

appears to be a genus of coarse composite plants of North America. The angustifolia variety commonly known as Black Sampson, growing in the United States, is claimed to be, according to Gould's Dictionary of Medicine, of marked alterative value in strumous and syphilitic conditions. Ecthol may be assumed to combine the therapeutic properties of the drugs indicated.

VALSOL PREPARATIONS.

(WILLIAM POPPELREUTER, 19, ST. DUNSTAN'S HILL, LONDON, E.C.)

The valsols may be regarded as oxygenated vaseline oils which possess singular solvent powers on many drugs which by this means may be exhibited effectively by inunction. The specimens we have received from the above firm were valsolum purum liquidum No. 1 and valsolum purum liquidum No. 3. The former easily dissolves iodine and enables the ready preparation of an iodine application of any strength. The latter easily dissolves creosote and guaiacol up to 20 per cent., and ichthyol up to 10 per cent. even in the cold. The value of valsols is obvious where the effective application of certain drugs to and through the skin is desired.

FLEXIBLE GELATIN CAPSULES (VELO BRAND).

(WILCOX AND CO., 83, MORTIMER-STREET, LONDON, W.)

The merit of these capsules is that being made by a special process of moulding a thin and uniform gelatin envelope is obtained. Moreover, the capsules are perfectly uniform in regard to size so that the amount of the contained fluid is constant, thus ensuring accuracy of dosage. As examples of the application of this method we have received specimens of capsules containing pure beechwood creasote, santal oil, copaiba balsam, and terebenthene oil.

"ORION" SOUTH AUSTRALIAN BRANDY.

(R. BURNEY YOUNG, SOUTH AUSTRALIAN GOVERNMENT BONDED DEPOT, 35, WALBROOK, LONDON, E.C.)

We have held again and again in our columns that brandy should be defined as the spirit derived exclusively from the distillation of wine, the name being quite wrongfully and fraudulently applied to spirit derived from maize or other sources. The "Orion" specimen we have every reason for believing complies with this definition and the results of our analysis, which were as follows, are decidedly in favour of this belief: extractives, 0·20 per cent.; mineral matter, *nil;* acidity reckoned as acetic acid, 0·074 per cent.; alcohol, by weight 40·10 per cent., by volume 47·45 per cent., equal to proof spirit 83·16 per cent.; alcohol in volatile ethers, 0·054 per cent. Ethers are quite absent in corn spirit—as, for instance, in whisky—but in the brandy before us we find a singularly high proportion. Indeed, we have not examined brandy containing so much ether—the ether of wine—as does this specimen. We cannot say, however, that the spirit is as mellow and smooth to the taste as is desirable. Its flavour is somewhat fiery, probably because the spirit is young and immature, which qualities only time can correct. Otherwise this brandy is far preferable for medicinal purposes to the stuff called brandy which is not derived from wine and which is therefore not strictly speaking brandy in accordance with the definition which we have already laid down. We have emphasised the importance of this difference since a spirit distilled from wine exercises a stimulating effect over and above that due to alcohol.

NORTH DEVON INFIRMARY, BARNSTAPLE.—Mr. Joseph Harper, M.R.C.S. Eng., L.R.C.P. Lond., presided at the annual meeting of those interested in this institution on August 15th. The medical report showed that 622 patients had been admitted during 1898. The average daily number was 41 and the average stay was 23 days. The financial statement showed that the expenditure amounted to £2362, which is much above the ordinary income of the infirmary.

New Inventions.

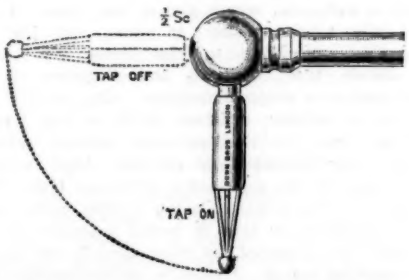
NEW ASEPTIC WATER-TAP AND WARD WASHSTAND.

THE washstand and water-tap here illustrated (Fig. 1) have been designed and made, on my suggestion, by Messrs. Down Brothers, London. The washstand is intended especially for a hospital ward and I have found it very satisfactory during the year it has been in use at the Sheffield Royal Hospital. It consists of an enamelled iron stand, with towel-rails, running on four small wheels with ball-bearings, and supporting a glass reservoir for warm water, to the bottom of which is attached a nickel-plated metal tube terminating in the tap, to be described presently, and provided with a stopcock to regulate the size of the stream. Under the tap is a basin with a hole at the bottom, from which an indiarubber tube leads to a pail. Behind the tap is fixed a box with a hinged lid, and divided into compartments for soap, nailbrush, and an antiseptic solution (such as 0·2 per cent. mercuric iodide in spirit). The object of the washstand is to provide a ready means for frequently and rapidly washing the hands under running water. No plug, therefore, is supplied to the basin and it is found that a very small quantity of water, flowing in a small stream, suffices for cleansing the hands, so that the washstand, which is very easily pushed along from bed to bed, can be used by the surgeon (or physician) after his examination of each patient, the reservoir holding enough water for perhaps a dozen washings (when it can be readily refilled), whilst the pail will hold three or four times as much as the reservoir (thus obviating its being frequently emptied).

FIG. 1.

The object of the aseptic tap (Fig. 2) is to supersede the cumbersome treadle arrangement frequently employed, while, like the latter, it avoids the necessity for touching a possibly septic tap immediately after washing. It consists of a metal tube with a terminal joint which is closed by being turned into line with the tube, but which allows the water to flow through it when brought down to a right angle with the tube. The end of the terminal joint, which forms the handle by which the tap is moved, is made of three stiff pieces of wire converging into a small terminal knob. Over this handle the water flows, constantly washing it while the tap is turned on, and it is therefore quite clean when turned up in order to shut off the stream. After

FIG. 2.



washing and drying his hands the surgeon can dip his fingers into the antiseptic solution. This tap could, of course, be adapted to the water-supply pipe over any fixed basin.

R. J. PYE-SMITH, F.R.C.S. Eng.

Sheffield.

A NEW COMBINATION MEDICAL BATTERY.

THE Lithanode Company have sent us a very compact form of secondary battery which offers the advantage of giving a current suitable either for cautery or lighting purposes. It is fitted with a double resistance, one for each purpose. By an ingenious although quite simple piece of mechanism the cells, of which there are four, can be arranged either in series of four for lighting purposes or in

two sets of two for cautery work. This arrangement works automatically according to which attachment is in use. The advantages of the combination will be apparent to any medical man who has had experience of the trouble of having to keep two batteries in working order. The battery is quite portable, being 5½ inches by 4½ inches by 6½ inches high and weighing under 10 lb., and it is easily recharged. The address of the Lithanode Company is Harvey's-buildings, 427A, Strand, W.C.

TRUTH ON "DOCTORING BY CONTRACT."

WE are not surprised to see that the evils and scandals of the system of "doctoring by contract" which we have been exposing for many years past should begin to attract the criticism of lay journals. The issue of *Truth* of August 17th contains an article of four columns on the subject which is well written and deserves the consideration of all persons concerned in such schemes. The writer is presumably a layman, but he has been well "coached up" on the various forms of medical aid associations by medical men, and he himself has clear ideas as to the fundamental principles which should underlie all such schemes if the obvious rights of the medical profession are to be preserved and proper medical attendance on the members is to be secured.

He is unqualified in his condemnation of medical aid associations which are run by "one man" or on a purely commercial principle where the medical officer is a mere servant. "Under this system the association doctor is simply reduced to the position of a paid servant of a commercial concern carried on by a layman who undertakes to supply medica attendance to all comers at so much per head. ..... The doctor employé is necessarily 'sweated.'" Of the sum paid for medical attendance—say, 4*s.* 4*d.*—he only receives 3*s.*—the rest goes to pay canvassers—of whom in one case there are 40 or 50, &c. The tendency of such a system is to increase the number of patients to be attended by a medical officer to such a point that the work is scamped. This system, the writer says, is chiefly prevalent in the north of England. He does not mention in connexion with it the insurance companies who with a system of small life insurance run a medical aid system. But the principle is equally commercial in both cases, and the way in which all comers are swept into the net is equally unprincipled. The promoters, he says, "*make their own terms with the doctors and they rope in, chiefly by canvassing, as many members as they can possibly get hold of, without regard to income, age, condition of health, or any other circumstance.*" He points out how hard this is not only on the medical officer but on the "surrounding doctors" who are robbed of their patients by the eloquence of canvassers and by the demoralising scale of low fees. Such "surrounding doctors" are cut down in their reasonable charges to comfortable people to the starvation point and are driven to the forming of sixpenny dispensaries. The writer in *Truth* is very lucid in his perception and exposure of the iniquity of this commercial exploitation of medical men. He is equally so in the expression of his conviction that the "medical authorities" will be justified in striking with all the might of the profession at "one man" associations, or at "associations" which are merely commercial speculations, "as against public policy and the intention of the Medical Acts."

But it must not be supposed that the writer in *Truth* condemns all medical aid associations. He is careful to defend the right of individuals, or of a number of individuals together, in combination to procure medical attendance at a fixed salary instead of paying fees for each visit. He maintains that any attempt to deny this principle or to extinguish associations altogether would be "intensely resented" and would throw the profession into "very hot water." Amongst other evils it would lead to political agitation, to the increase of hospital abuse, and to a great extension of medical relief by the Poor-law. Al that the present evils prove to be necessary is that some limit should be put, on the one hand to the reduction of the medical man's remuneration and on the other to the multiplication of his patients—actual or potential. "*There is every right*," he says, "*on the part of the profession to require that the class of persons eligible for admission shall be clearly defined and that the subscriptions shall be determined with some regard to the social status or incomes of the patients*" and "*to their probable medical requirements.*" "After payment of fixed expenses, the whole of the receipts should go to the medical officer." These are sound principles. But we regret to see that the writer includes among his fixed expenses those for "canvassers" whom he has so eloquently described as "robbing" medical men and destroying that private medical attendance which is as necessary and good for the poor as for the rich. Many will object that he raises no direct question of wage limits, but he does urge that members shall pay not only with regard to their social status but also with regard to their probable medical requirements. The profession is entitled to insist on these points and on an examination that would ascertain and secure them. Women and children, he says, should pay on a higher scale. The clear definition of persons entitled to the benefits of the association seems to imply the exclusion of those who are not so entitled, though the writer seems rather to rely on payment proportional to means and to probable wants than to exclusion by a mere wage limit. He thinks that the medical authorities would be quite justified in laying down such principles and in making it a professional offence for a medical man to be connected with associations not constituted properly with a committee and not managed on such principles. It is satisfactory that the evils which he points out are practically those indicated in the reports of the General Medical Council, especially the tendency to multiply members and to sweat the unfortunate medical officer and the indiscriminate canvassing for the patients of other medical men. It will encourage the General Medical Council to see its conclusions confirmed and it may serve to convince the members of all medical aid associations of the necessity in the public interest of working on principles that permit a proper attendance on the sick and a proper remuneration of their medical officers. Neither the General Medical Council nor the medical profession have ever questioned the right of combination, but both must insist on its not being abused.

THE LANCET.

LONDON: SATURDAY, AUGUST 26, 1899.

WE publish in our columns this week a report by our Special Commissioner on "The Colliery Surgeons' Strike." The term "strike" has trade union associations, but it expresses accurately the present position of affairs. We have on more than one occasion urged upon the profession the necessity of supporting one another in this movement[1] and in similar movements, and now that matters have come to a crisis the approval and sympathy of the profession generally should more than ever be extended to the severe measures which the colliery surgeons in one part of England have been compelled to adopt. Arguments and appeals have been made in vain and consequently the members of the Colliery Surgeons' Association have issued a circular containing the following resolution:—

That, owing to the board of the Wigan and District Miners' Permanent Relief Society employing surgeons not recognised by their fellow practitioners (non-union men) and threatening to import other surgeons, we, the members of the Colliery Surgeons' Association, refuse to attend any member of the Wigan and District Miners' Permanent Relief Society for accident, privately or otherwise. This to take effect after sufficient notice has been given to the general secretary and provided no satisfactory arrangement be made in the meantime.

A copy of the above resolution was sent to the general secretary of the Wigan and District Miners' Permanent Relief Society, and no terms having been agreed upon the surgeons were compelled to carry out their resolution which they announced would come into effect on and after July 17th. The circular also explains the position which the surgeons have taken up, and our Commissioner has described the events which led up to its issue. At every colliery there is an accident club, to which the men subscribe weekly. Each club is governed by a board, which consists chiefly of checkmen, and out of the funds 2*s.* 6*d.* per man per year is set apart for medical fees. The board appoints as many medical men as it requires to attend to accident cases and of course the medical man called on is always the one nearest to an injured man's home. At the end of the year the total sum of the half-crowns is divided equally among the medical men attached to each pit. By this plan a medical man who may attend only four patients in a year receives quite as much remuneration as one who attends 50. It is here that the grievance of the medical men as club doctors lies. The terms which the surgeons ask are 15*s.* per case—this fee to cover attendance for 12 months from the date of the accident if necessary. According to the present arrangement the division of labour must be necessarily very uneven in different districts and although the payment is made by the same board, yet surgeons in one district have been receiving as little as 2*s.* 4½*d.* per case, whilst in a neighbouring district the amount might be as much as 30*s.* per case for an identical accident. It further follows that the more cases of accident that occur the less the rate of payment per case, which is obviously unfair. The Colliery Surgeons' Association have ever been willing to meet the miners at general meetings and to lay their case before them, as they have always contended that the men who find the money ought to be consulted, but in this matter they have always met with strong opposition from the officials.

The attitude which is now adopted by the Colliery Surgeons' Association is certainly a strong one and one which may at first sight seem unjustifiable—viz., to refuse to see a patient when called upon. Undoubtedly if a life were at stake, as our report indicates, not a single member of the association would hesitate to break through the general resolution quoted above, but as regards ordinary cases we believe that the surgeons will be supported in their action by all members of the medical profession. The position is no doubt to be regretted, but every other method has been adopted without success and they have consequently had to fall back upon the only resource left—to refuse to act when called upon by members of the Relief Society. It is to be hoped that the officials of that society will see the justice of the demands of the surgeons. The fee suggested is a most moderate one, and the whole proposal is a most practical and right one. Payment according to work done is a principle uniformly recognised and to take advantage of men who belong to a profession instead of to a business or a trade is to set at nought all the principles of trade unionism upon which the very officials who are now offending pride themselves. We do not wish to imply that we thereby pledge ourselves as unreservedly approving of trade unionism methods, we merely point out the logic of the situation. We are informed that the Relief Society have been trying for several months to import other medical men from the various districts and to get them to accept their terms (2*s.* 6*d.* per head per annum), but that they have only succeeded in one instance. This is a matter for congratulation and we trust that that gentleman will, on further deliberation, join the rest of his professional brethren in attempting to right a grievous wrong.

THE action of the Metropolitan Hospital Sunday Fund in attaching "merit" to the appointment by hospitals of an efficient inquiry officer and that of the Council of the PRINCE OF WALES'S Fund in appointing representatives to visit hospitals with a view to friendly criticism of the work done by them are justly praised by Mr. LOCH in his recent valuable letter to the *Times* on the subject of the hospitals and their out-patient departments. There is no doubt that much good has been done and some evil exposed by both modes of action. But we are a long way yet from having made any effective impression on the abuse of hospitals. This is not to be wondered at. The scale of hospital work, especially in the out-patient department, is so immense and much of it appeals so pitifully to human

[1] THE LANCET, Nov. 12th (p. 1281), Dec. 24th, 1898 (p. 1718), and March 4th, 1899 (p. 618).

sympathy that the effective application of critical methods to it is very difficult. This is well shown by Mr. LOCH and indeed is very obvious. Some of the figures of the out-patient departments are very significant. Guy's Hospital had 89,533 in 1898; the London Hospital, 178,838; St. Thomas's Hospital, 64,975; the Middlesex Hospital, 37,447; St. Mary's Hospital, 36,816; St. George's Hospital, 34,312; the Metropolitan Hospital, 30,017; the Great Northern Central Hospital, 28,160, &c. St. Bartholomew's Hospital in 1897 had over 160,000. It must not be supposed that hospital abuse arises only in connexion with the out-patient department. But it is most easy there and there most easily overlooked. For the very scale of hospital abuse makes any complete detection of it by existing methods impossible. Some of the figures given by Mr. LOCH show this. In a hospital with 28,000 patients inquiry was made only as to 6288. At another hospital which deals with 37,000 patients 1069 were inquired into; at a third 1121 cases were inquired into. The results of inquiries so far have been conflicting. At one hospital with an annual roll of 109,000 out-patients and casualty applicants only 54 were rejected. At a second hospital considerably less than 1 per cent. were rejected; at another 28 per cent.; and at another 31 per cent. Doubtless there are at different hospitals very different degrees of abuse. But such figures as we have given suggest the inadequacy of the means of inquiry. What can one officer, however efficient, do in the way of ascertaining the fitness of so many thousands of cases? To put such a question is to show the imperfection of the system of inquiry.

The Council of the PRINCE OF WALES'S Fund has very properly visited the hospitals which it assists and has made its grants conditional on many improvements in administration, though we are not aware that it has dealt in any effective way with the great question of indiscriminate medical relief with inadequate or no inquiry into the nature of the cases and the circumstances of the patient. These facts have led Mr. LOCH, at the desire of others, to add one more suggestion for the better investigation of the fitness of cases. He cites the plan adopted for the purpose at the Royal Free Hospital where a lady almoner of much training and experience is employed. She is assisted by voluntary workers. They were able in a year (1898) to interview 4632 out- and casualty-patients out of a total of about 36,000. Mr. LOCH carefully points out that the object of the inquiry was not merely to detect hospital mendicity but to assist charitably those who needed it. This is a most important point. And it is especially satisfactory to see it accentuated by Mr. LOCH who represents a society which is sometimes considered to be hard-hearted and to be bent more on the detection of unfitness and imposture in applicants than of discovering circumstances calling for pity and charity. It will be an immense help to the cause of true and efficient inquiry into the claims and circumstances of hospital patients if it is made evident that the object of the inquiry is to help really hard and deserving cases as well as to detect unfit ones. The following facts will serve to show that the Charity Organisation Society is used by the inquiry staff of the Royal Free Hospital for charitable purposes. Of the 4632 cases interviewed 1447 were advised to join a friendly society or a provident dispensary on recovery, 70 were sent away after first aid as able to pay for private advice, 157 were referred to the Poor-law, 292 were dealt with by various district committees of the Charity Organisation Society, and 41 were assisted from other sources. It should also be noted that the almoner and her colleagues were careful not to interfere with the attendance of cases of interest from an educational point of view and showed due deference to the wishes of the medical staff. Theoretically it does not seem obvious that a lady almoner with a voluntary staff should be more effective than a single inquiry officer of the male sex. Besides, it cannot always be easy to get agents at once voluntary and efficient for such purpose, but such are the actual facts of the case at the Royal Free Hospital. The results compare favourably with those of any hospital with which we are familiar and the method seems worthy of imitation by other hospitals, if only by way of experiment. Mr. LOCH'S letter provoked a very good reply from Mr. AUSTEN LEIGH in vindication of the method pursued at St. Mary's Hospital and in favour of variety of methods. We cannot, however, admit with "R. K.," in his letter to the *Times*, that Mr. LOCH entirely mistakes the function of hospitals, or that it is not a duty, as "R. K." seems to think, of all who ask support for hospitals to see that they are not grossly abused. The real facts to be borne in mind by those who administer hospital relief are twofold: first, that nothing is more right than the quick and complete accommodation of grave cases of sickness or accident; and secondly, that such accommodation is not due to those who can be treated as well at home and have the means of paying a private medical man. Moreover, the charitable public have a right to expect the authorities of hospitals to foster the spirit of independence in those who seek their advice and assistance. It is only by such confidence that the generosity of the charitable can be stimulated for cases where it is really needed. By an enlightened administration of hospitals they would cease to be pauperising agencies and would be at the very top of all charities.

There is one other chance to arrest the demoralisation of hospitals—we mean in the possibility of hospital physicians and surgeons realising the abuse of which they are made the agents and the instruments. They cannot fail to see, if they will spare time to consider, how unfair this is to the younger members of the profession whether in general or consulting practice. The wonder is that they have not sooner realised this, as well as the demoralising influence of the system on the people who spend hours and hours in the waiting-rooms of hospitals. The number of those who do see it is certainly increasing, but the rank and file of the profession have reason to feel discouraged that the increase is so slow and that their leaders keep themselves so much aloof from those who wish to see the abuse corrected without injury to hospitals or to medical education.

IT is fortunately not in the more civilised and populous countries of the world that the keenest and in a sense the most lamentable effects of prolonged absence of rain are to be witnessed. Water being an absolute essential both of

existence and of the most elementary comfort, aggregations of population in selecting spots wherein to dwell have had due regard to the necessity of procuring water, at any rate of some sort or other, and they have only extended their habitations from these often defined areas in proportion as the facilities for transporting water have developed. At the present day, speaking for Great Britain alone, the engineer, the medical officer of health, and the ingenuity of the people themselves, have for most localities succeeded in procuring a water-supply of one or another description and drought is in such places happily but a relative term. For English communities drought spells, in the first instance at least, inconvenience, annoyance, blocked drains, dirt, and dusty streets, but this inconvenience is also often associated with an increase of such diseases as are influenced in that direction by a dry condition of soil and by an unusually high temperature; indeed, it is practically impossible to separate, in so far as the public health is concerned, the direct effects of drought from those of heat, dirt, and dryness of soil.

With the prolonged absence of rain which this country is experiencing during the present summer we may be certain that in many places the difficulty of procuring an adequate supply of pure, or even drinkable, water must needs be approaching an acute phase, and in the near future, unless the tension is relieved by the advent of sufficient rain, we must expect to hear from not a few sources (indeed, in another column reference is made to the straits to which the inhabitants of South Wales are already reduced) of the inconvenience, anxiety, and perhaps even of actual suffering, which are being occasioned. These complications are of course likely to manifest themselves primarily in certain isolated dwellings in rural districts where the inhabitants have perforce to content themselves with such rain-water as they can collect and store and in districts where the supply is derived exclusively from shallow wells containing, even in wet seasons, but a limited and withal dirty supply of water. In places such as these it is to be hoped that the inconveniences which result may have the effect of compelling the local sanitary authorities to see that adequate provision is made for the future. But there are good reasons for fearing that the exceptional absence of rain may be felt also by those who have endeavoured, often at no inconsiderable trouble and expense, to provide themselves with a public supply, and who have in point of fact sufficient for their needs in what may perhaps be termed normal seasons. More particularly is this not unlikely to occur when the water is procured from superficial springs, from limited catchment areas, or from diminutive rivulets and in places where storage is but very imperfectly provided for. Fortunately, however, in those cases where the water is drawn from deep terrestrial sources no inconvenience is, at any rate at present, save perhaps in instances where the underground lake has already shown serious signs of failing, to be anticipated; and this statement is also probably true when the supply is taken from extensive upland surface areas in rocky impervious formations and stored in artificially enlarged natural lakes such as Thirlmere or Vyrnwy. It is, though, not altogether improbable that the present state of affairs, if continued much longer, may discover weak spots in certain places where the authorities have been in the habit of regarding their supply as practically inexhaustible. Be this as it may, the circumstances are clearly such that sanitary authorities possessing water-supplies concerning which there is the least suspicion on the score of sufficiency should instruct their officers to report to them as to the prospects, in order that if need be precautionary notices enjoining economy with regard to the use of baths and watering gardens, may be duly circulated.

The fact, however, that so many of our important water-supplies are in the hands of companies who have more regard to dividends than to the public health or convenience renders it somewhat difficult to ascertain the actual state of affairs, and there have been indications that in some instances companies prefer to cling to the last to the hope that rain may fall rather than to take proper precautionary measures as regards economy at an early date. Unfortunately in this direction the officers of sanitary authorities are at present almost powerless to assist the public, but even here an effort might be made on the part of the sanitary authority to ascertain officially from the company whether or not they have reason to anticipate a scarcity of water.

We have no space to discuss what we may call the accompaniments of prolonged drought—i.e., dryness of soil and excessive heat—but the effects of these accompaniments are likely to be far more widely diffused and less local than the direct effects of insufficient water-supply. It is, briefly stated, upon the vital processes of certain micro-organisms which may perhaps be provisionally regarded as having their natural habitat in the soil that the prolonged heat and dryness are likely to exert no insignificant influence. In the direction, for instance, of infantile diarrhœa, associated as it is with the high temperature of the thermometer at four feet deep, we may expect decided manifestations, and the behaviour of enteric fever will be watched with great interest during the present and ensuing quarters. In fact the exceptional circumstances of the time afford opportunities for the epidemiologist and the meteorologist to compare notes and the low-level of the subsoil water may be profitably taken advantage of to start a series of observations in this direction. If, too, abundant rains succeed the drought some interesting phenomena as regards disease prevalence and outbreaks may perchance be witnessed.

Annotations.

"Ne quid nimis."

DEATH CERTIFICATION: CORONERS AND THE REGISTRAR-GENERAL.

THE Registrar-General has recently been accused by an evening contemporary of obstructive policy with reference to the institution of prosecutions for offences against the provisions of the Births and Deaths Registration Act, 1874. It is alleged that the Registrar-General frequently refuses to prosecute in cases of false certificates of stillbirth, &c., reported to him by coroners. In the absence of more precise information as to the cases referred to it is impossible to express an opinion as to whether the Registrar-General should be blamed for too

much hesitancy in directing prosecution in such cases. We have reason to know, however, that the number of prosecutions instituted by the Registrar-General has increased in recent years and is still increasing; and further, that the opinion is officially held that the public failure of a prosecution does more harm than the decision not to prosecute in some cases where a successful issue is uncertain. Whatever may therefore be the amount of blame that may attach to the Registrar-General in the matter referred to there is obviously another side to the question, and the responsibility of coroners for a considerable proportion of the uncertified causes of death now registered should not be overlooked. Year after year the Registrar-General has in his annual reports appealed to coroners for their necessary assistance in the reduction of the number and proportion of uncertified deaths, but with very little effect. In the last published annual report, dealing with the statistics for the year 1897, it is pointed out that no fewer than 11,103 uncertified deaths were registered in England and Wales during that year, "of which more than three-fourths were reported to coroners who decided that inquests were unnecessary." Stated in another way it appears that of the total deaths registered during the year the causes were in 2·06 per cent. uncertified, including 1·57 per cent. in which the cases were reported to coroners, and 0·49 per cent. in which they were not so reported. The proportion of deaths registered as uncertified notwithstanding that they had previously been reported to the coroner varied very widely in different parts of England and Wales—from 0·11 and 0·39 per cent. of the total deaths in the Middlesex portion of London and in Monmouthshire, to 3·24 and 4·01 per cent. in Warwickshire and Westmorland. The relative responsibility of the Registrar-General and of coroners for the still large proportions of uncertified deaths under the present unsatisfactory state of the law dealing with the certification of causes of death is a subject of considerable importance concerning which much misunderstanding apparently prevails.

THE DANGERS OF EXPLORATION IN COLLIERIES AFTER AN EXPLOSION.

IT is daring and brave work to explore the galleries of a colliery after an explosion has occurred, with the view of rescuing those who may have survived the explosion but who are still faced with the great danger of being poisoned by after-damp. It is well known now that the poisonous properties of after-damp, be the explosion due to gas or to dust, are owing to carbon monoxide. Unfortunately this gas cannot be detected by the ordinary simple means employed for detecting firedamp. The lamp test is unavailable, and so insidious is the nature of the poison that the mischief may be done to a searcher before he is aware that carbon monoxide is present at all, and he may suddenly become unconscious and eventually die although brought with all speed to fresh air. A terrible colliery disaster occurred near Cardiff in Wales on August 18th, by which over 20 lives were lost. Volunteers were not wanting to aid in the work of rescue, and we are proud to record that it was one of the members of our own profession, Mr. Parry Jones, who organised the work of rescue and led the way into the poisonous pit to ascertain what assistance could be afforded and how far the rescue of those who were not yet dead amongst the entombed could be effected. We repeat that this is brave work which commands the admiration of all. Is it, however, conducted with due regard to certain precautions which if adopted would make the search more successful, and attended by less risk to the lives of the searching party? In the disaster which occurred last week, for example, many of the searching party, including Mr. Parry Jones, after indomitable perseverance prompted by the noblest of all aims, the saving of life, were prostrated doubtless through the insidious effects of carbon monoxide, and they in turn had to be restored. Three years ago Dr. Haldane drew up an admirable report to the Home Secretary on the causes of death in colliery explosions, in which he pointed out what precautions could be taken by an exploring party. First of all he showed that the presence of a dangerous proportion of after-damp or other suffocative gas may be detected easily and sufficiently quickly by observing the symptoms of a mouse or other equally small warm-blooded animal. A few white mice could easily be kept for this purpose in the engine-room at the top of the down-cast shaft and could be taken down in small cages by the rescuers. With the help of the indications afforded by the mice it would be possible for the rescuers to keep within the limits of safety and yet to go forward with rapidity and confidence as far as they could. Again, it requires about four cubic feet of oxygen to keep a man alive for two hours while making his escape to the shaft, or for six hours while remaining at rest. Now this volume of oxygen can be compressed into a steel cylinder of a capacity of one and three quarter pints only, and the apparatus required for economically breathing this oxygen could, as Dr. Haldane points out, be constructed on the principle known to physiologists as that of Regnault and Reiset's respiration apparatus. A somewhat more elaborate one on the same general lines was devised by Mr. Fleuss many years ago. Should it not be compulsory that some such apparatus should be provided not only for the poor entombed party but for the rescuers also and its use in the latter case enforced before the work of rescue is begun? There is no evidence that any precautions of this kind were taken at this recent terrible disaster and we think that the attention of the Home Secretary should be immediately directed to this most important matter.

DO EPILEPTICS RECOVER?

DR. EDGAR J. SPRATLING of the Massachusetts Hospital for Epileptics contributes an interesting paper in connexion with this question in the *Journal of Nervous and Mental Disease*, May, 1899. He believes that a very small percentage of epileptics actually do recover but that the possibility of a fresh onset of the disease is ever before the patient. And so far as Dr. Spratling has been able to investigate the life-history of so-called recovered epileptics he has found that almost without exception either that disease or one of its congeners has fastened itself upon the unhappy victim. Accounts are given of cases illustrating some of the vagaries of epilepsy. For instance, one young man of Jewish blood who had suffered from convulsions in infancy grew up free from every trouble thereafter until he was 12 years of age, when by some untoward condition—probably enteritic indigestion—pronounced epileptic seizures supervened. The fits became frequent and resisted all treatment and after having suffered almost daily for four years he went to Carlsbad in Germany, where owing to the influence of the waters, the outdoor life, or the food, the fits soon ceased and until his twenty-sixth year he was free from attacks of epilepsy. At that age, however, a worse malady—general paralysis of the insane—overtook him and cut his life short. The three interesting points in this case were the two recoveries, one after infancy and the other during the period of adolescence, and the supervention of another and graver disease of the brain in early adult life. For practical purposes it has been agreed to consider a person as recovered who has for two consecutive years been found free from all epileptic attacks and this is the rule observed at Craig Colony in New York

in deciding on the discharge of patients. In all such cases, however, the patient is warned and instructed as to the importance of a proper regulation of his dietary. One patient is mentioned in this connexion in whom an ounce of pork would produce a series of from five to 12 convulsions; without the pork he would go for weeks or even months (other things being favourable) without an untoward accident. In another patient it was found that eating roasted green corn brought on convulsions readily, while a third was unable to take shell-fish. "Any number of patients may be made to have from one to a dozen convulsions at will by giving them an acid sauce, as cranberry, then sweet milk." In asylums containing epileptics it has not unfrequently been noted that similar kinds of food will produce convulsions in many patients. Dr. Spratling refers to Dana, who in his work on nervous diseases says that from 5 to 10 per cent. of epileptics recover—a statement which is regarded as vague and indefinite in the absence of any precise meaning as to the term "recovery." A patient known to Dr. Spratling, a weakly ill-shapen dwarf with spinal curvature, had his first fit at the age of 17 years, his second fit at the age of 18 years, and the third fit in his twenty-first year. The prognosis really rests on the removeability or non-removeability of the exciting cause. Often, however, the former is both obscure and difficult to attain. "A very few cases do actually get well and remain so, by some structural change wrought in the cell organism, but most 'recoveries' are respites granted by the removal of immediate causes." Dr. Spratling concludes by throwing out the warning that it is the duty of medical men to discourage the marriage of such patients and to warn society against the evil effects of marriage and of the begetting of children by epileptics.

THE DISCOMFORTS OF ENGLISH RAILWAY TRAVELLING.

THE *Times* in a recent leading article on English and American railways from the standpoint of the traveller summed up on the whole in favour of the former. We are not quite sure that this judgment will be universally accepted even in this country. It is true that the English long distance trains and the principal expresses on the lines north of the Thames leave little to be desired from the point of view of comfort. The travelling is smooth, the trains on the whole are punctual, accidents are few, and the rolling stock is well designed for the purpose in view. The Englishman, as a rule, prefers privacy to splendour and for his purposes the small compartment with three or four passengers in it is superior to the magnificent Pullman with thirty. But though there is little fault to be found with the English expresses—at least on the lines connecting London with the North and West—the local and suburban services leave much to be desired. The difficulty of dealing with a local train service, particularly in the neighbourhood of London or any one of the great towns, is, of course, enormous. There is a rush of travellers at certain hours of the day and at those hours carriages are almost necessarily overcrowded and uncomfortable. What happens to the long distance trains to Devon during August or to those running to Scotland on the Twelfth must happen daily on these local lines at the beginning and close of business hours. These are unavoidable discomforts and may be accepted without undue complaint. But there are certain avoidable discomforts, due chiefly to a lack of perception or of imagination on the part of the railway companies concerned, which might easily be removed and the removal of which would be an enormous benefit to the travelling public. So many persons now travel daily to and from business by train that the number of persons affected by such a reform would be very great. Nor is the question one of merely trifling importance. It can hardly be doubted that the growing practice of living, or at least of sleeping, outside a town, even though business requires a person to be present in it during certain hours of the day, is a healthy one. Granted that the journey to and fro can be performed under hygienic conditions and that its duration is not too prolonged no more desirable solution of the problem of city life can be conceived. But if the journey cannot be performed under such conditions the benefits of sleeping in the country will be neutralised by the ill-effects encountered in reaching it. It is a matter of common knowledge that excessive vibration in travelling adversely affects the nervous system of sensitive persons. It is advisable therefore that such persons, if they intend to travel by train to their business every day, should select a line where smooth travelling is possible. How many such lines are there near London? How many are there near any of our great towns? The railways out of London south of the Thames are notorious in this respect. Even the fast boat expresses to Dover or Folkestone or Newhaven do not afford smooth travelling if they be compared with the expresses going northward, and what is true of their expresses is still more true of their local and suburban services. Again, anyone who has travelled from Liverpool-street by one of the Great Eastern local trains must have observed the excessive vibration and oscillation which marked the journey. The fact is, no care seems to be taken to make local or suburban travelling comfortable. The express lines are laid, as far as possible, straight, but no care is taken to lay the local lines in this way. The trains swing round curves, rattle over a network of points, crash and sway this way and that. They start from the stations with a jerk; they pull up with a jerk and a jar. These things to persons of sensitive organisation are a misery and a positive injury to health. Again, the doors on local trains nowadays are usually made to close with a snap. Some regrettable patent has made this possible and it is no longer necessary for porters to close the doors by turning the handle. A single bang, or rather a series of single bangs, all down the train completes the operation. The result of this to persons who are over-tired and perhaps irritable after a hard day's work in office or chambers is indescribable. These unhappy beings may be seen sitting resolutely beside the doors, closing them as each passenger enters or departs in the hope of escaping the violence of the porter. But though the passenger can, by constant watchfulness, prevent his own door from being slammed the slamming of those on either side of him will cause him almost equal suffering. Almost all local railways are rendered intolerable by this slamming of doors, the one exception (we name it *honoris causâ*) being the District line. The Metropolitan, on the contrary, is one of the great sinners, the Brighton line being, perhaps, the worst of all. Whether some sympathetic director has intervened on the District Railway and insisted on all guards being taught to close a door quietly we do not know, but the astonishing fact remains that on this line alone is this rule consistently observed. It is not too much to say that until more care is taken to diminish the discomforts of daily railway travelling on suburban lines the good effects to a business man of living out of town will be largely neutralised.

MEDICAL REPORTS OF THE CHINESE MARITIME CUSTOMS.

THE medical reports of the Chinese Imperial Maritime Customs for the half year ended Sept. 30th, 1898, are contributed by the Customs medical officers of six towns—namely, by Dr. D. Rankine of Ichang, by Mr. F. T. D. Clindening of Kiukiang, by Dr. J. A. Lynch of Chinkiang, by Dr. H. J. Hickin of Ningpo, by Dr. A. Hogg of Wenchow, and by Dr. Roderick Macdonald of Wuchow. The practice of these gentlemen seems to be mainly among the foreign

(e.g., European) residents in each of these towns and none of them make any allusion to the special diseases of tropical climates other than malaria, or to any epidemic except the one undermentioned. Dr. Rankine and Mr. Clindening remark on the high temperature prevalent in their localities in summer. In Ichang the thermometer rose to 109° F. in July, 1898, and to 106° in the following month. At Kiukiang in 1898 the maximum temperature in the "true shade" was 105° in July, 104·6° in August, and 100° in September. In the other three towns the heat was not so great. Dr. Rankine makes mention of a peculiar epidemic, for which, however, he does not suggest any name or pathology. The whole of his reference to it is as follows:—

In 1897 an epidemic raged here as elsewhere in the Yangtze Valley and carried off the natives by scores. I did not see any cases amongst them, but I was called one day to the convent to see one of the sisters who was reported to have this disease. I found her lying in a comatose condition and got a history that such attacks were intermittent. She had lucid intervals, became quite conscious, talked rationally, then suddenly without warning she would become unconscious; twitching of the facial muscles would begin and convulsive movements of the limbs; the lips became cyanosed; she became delirious, then comatose. She was nourished by the mouth and by rectal enemata. Quinine was given in solution per rectum. One day her temperature suddenly rose to over 105°. She was comatose. A cold bath was ordered; the temperature fell to 102°. When the temperature went up, this was repeated in half an hour, and it fell to 101·5°. The administration of quinine was continued. The crisis was past and she gradually recovered. For a long time she had symptoms of peripheral neuritis, but these cleared off in time.

Dr. Hickin describes a case of purpura followed by rheumatic fever. The purpuric spots were extremely abundant over the whole body but declined in the course of a few days. The total duration of the illness was about two and a half months. Dr. Macdonald severely condemns the sanitary shortcomings of the town of Wuchow. These reports are published by the Inspectorate General of Customs, Shanghai, and may be obtained in London from Messrs. P. S. King and Son.

ON THE TEMPERATURE AND PULSE IN EPILEPSY, EPILEPTIC VERTIGO, AND HYSTERO-EPILEPSY.

AN important study of the variations of temperature and of pulse in attacks of idiopathic epilepsy, epileptic vertigo, and hystero-epilepsy is published by Marchand.[1] The observations were made on 300 patients suffering from these affections in the St. Anne's Asylum at Paris. Immediately at the close of an attack the patient was placed on a couch and covered with a sheet to prevent chilling and the temperature was taken when the convulsions had ceased sufficiently to render this practicable. All the temperatures were taken in the rectum with verified standard thermometers and were read *in situ*. The pulse-rates were taken simultaneously and at intervals of five minutes. Mr. F. W. Gibson[2] was the first to show that an elevation of temperature occurs in epileptic attacks, and four years later (1870) Bourneville[3] showed that isolated epileptic attacks cause a slight elevation of temperature. Bourneville's results, however, were controverted by Witkowski;[4] and though the former, from a series of 60 fresh cases, was able shortly after to show (1887) that isolated epileptic attacks increased the internal body-temperature by about from 0·5° to 0·6° C., yet the whole subject seemed to require re-investigation in view of its practical and diagnostic importance. The temperature in hystero-epilepsy had been studied but little and the conditions of the pulse in all the three types of epilepsy referred to above were known but very slightly. Marchand, as the result of his observations on 300 patients, was able to collect a vast mass of clinical data on these points. These data were on the whole concordant and pointed to important features in pulse and temperature which were sufficiently characteristic to constitute signs of diagnostic value. The general conclusions are summarised as follows: 1. Epileptic attacks cause an elevation of body-temperature of 0·5° C. on an average and lasting generally about 40 minutes after the fit. 2. The rise of temperature is distinctly noticeable 10 minutes after the fit and attains its maximum in 20 minutes after the fit. This maximum elevation lasts only 10 minutes. 3. Attacks of epileptic vertigo cause a decidedly less but still noticeable elevation of temperature. 4. Regarding epileptiform attacks those of general paralysis cause a marked elevation of temperature comparable to that occurring in true epilepsy. 5. In all cases, whether of epilepsy or of epileptic vertigo, there is in general no relation between the maximum height reached by the temperature and the age of the patient, and in the same patient different attacks may produce slightly different temperatures. 6. The pulse rises about 31 beats in frequency per minute above the normal after a fit, but 50 minutes after the fit it has fallen to normal. The maximum pulse-rate is attained 16 minutes after the attack and this rate persists for five minutes. 7. Both temperature and pulse fall after maximum slowly and steadily to normal or only with slight oscillations during subsidence. 8. In epileptic vertigo the pulse rises in proportion to the intensity of the attack. 9. The elevation of temperature in epileptic vertigo is 0·3 C.; it lasts 40 minutes. The temperature attains its maximum 15 minutes after the attack and persists at the maximum for 13 minutes, after which it gradually subsides. 10. Hystero-epilepsy increases the temperature by 0·4° C. and this elevation lasts 35 minutes. There is a direct ratio between the length of the attack and the elevation of temperature. In two-thirds of the cases the temperature is at its maximum at the onset of the period of "*attitudes passionels*." The duration of the maximum temperature is eight minutes and the fall thereafter to normal is gradual. 11. The pulse in hystero-epilepsy rises 57 beats and the acceleration of the pulse lasts 24 minutes. The maximum pulse-rate is attained at the onset of the attack (epileptoid period) and this rate lasts for four minutes. The subsidence thereafter is irregular and marked by considerable oscillations of the pulse-rate. 13. There is no relation between the duration of an attack and the maximum rate attained by the pulse in hystero-epilepsy. On the whole the cardiac disturbance (modification and irregular fall of the pulse) is much more marked than the temperature variations in hystero-epilepsy.

[1] Thèse de Paris, 1899.
[2] Journal of Mental Science, 1866, p. 497.
[3] Études de Thermométrie Clinique dans l'Hémorragie Cérébrale et dans quelques Maladies de l'Encéphale.
[4] Berliner Klinische Wochenschrift, October, 1886.

"A SUPERIOR PERSON" ON "HOW THE POOR ARE MEDICALLY TREATED IN LIVERPOOL."

"ONE Who Knows" tells us much and insinuates much more as to the fate of the poor in Liverpool, and especially as to their sufferings at the hands of medical men. The death-rate is very high. The medical men are "making money fast" in their cheap dispensaries and with their corresponding medicines, which he suggests should be analysed by the medical officer of health. He is not content with being anonymous, but he decidedly assumes an air of superiority. "We wish," he says in his letter to the *Liverpool Daily Courier* of August 19th, "to call attention to the illegal practice frequent among this class of medical practitioners of charging for death certificates." We refuse to believe any such story on the faith of an anonymous accuser of men who fight the death and disease of Liverpool among the poor when he is probably

"at home at ease." Let him come out into the open with any facts and we will give them publicity and consideration. Meantime he must be regarded as a coward and not taken seriously. The plight of the poor and the sick in Liverpool and the efforts to improve it are a problem of constant interest to us, but it is not to be solved by stabs in the dark aimed at their medical advisers who get little pay and deserve the greatest respect.

AMERICAN VIEWS ON THE PREVALENCE OF CANCER.

WE have received a lengthy communication from a legal gentleman in Buffalo, U.S.A., in which the writer, who appends to his name the letters M.A., B.C.L., protests against the assertion of Dr. Roswell Park of New York that cancer is seriously increasing both in England and in the United States. Our American correspondent deprecates the publication of Dr. Roswell Park's views both because he believes them to be erroneous and because they are producing a "species of cancer scare" both there and in this country. The subject of cancer prevalence in England and Wales has been dealt with recently in THE LANCET[1] at considerable length, and we would suggest a perusal of our article on the statistics of cancer if our correspondent should wish for detailed information as to what is known concerning the incidence of fatal cancer in this country during a long series of years. Although it is against our rule to publish letters on strictly medical subjects from non-medical writers, still, having regard to the exceptional interest which attaches to the subject, we willingly insert a summary of the main points in our correspondent's letter and we trust that our correspondent will acquit us of discourtesy to him in adopting that course. The April number of the *Practitioner* contains an article on Cancer by Dr. Roswell Park, Professor of Surgery in the University of Buffalo and Director of the State Pathological Laboratory in New York. In that article, which we have read with much interest, Dr. Roswell Park discusses the nature of cancer and its prevalence in different parts of the world, but more particularly in the United States of America; and inasmuch as the facts on which he relies are derived from the returns of the State Board of Health, we should have thought that they would be accepted in that country as beyond question. Passing by certain points of relatively minor importance, we note that the main inference which Dr. Roswell Park draws from his study of the New York statistics is to the following effect: That whereas the mortality from malignant disease in the United States has enormously *increased* during the last half-century, the mortality from consumption, another prevalent national scourge, has *decreased* even more rapidly during the same period. According to our legal correspondent the soundness of Dr. Roswell Park's deductions has been called in question in the columns of the *New York Medical News* by Dr. John Pryor, another physician of Buffalo City, who seems to have formed the opinion that Dr. Roswell Park's facts and conclusions are alike unworthy of confidence. We have not seen the correspondence in question, and consequently are unable to weigh the evidence adduced on either side; but we may point out, as a fact of some importance, that Dr. Roswell Park's conclusion concerning the recent terrible increase of cancer and the concurrent decrease of tuberculosis in the United States tallies singularly with the experience of this country and we are surprised that our correspondent, who is avowedly conversant with the literature of the subject, has omitted to notice our own observations to this effect in THE LANCET of April 22nd, p. 1111, and May 20th, p. 1376, of the current year. In our issue of the latter date we showed, on the strength of figures the accuracy of which will scarcely be impugned, that the registered mortality from malignant disease in England and Wales *has at least doubled* within the last 50 years; among males, indeed, there has been an uninterrupted increase from 195 per million of the male population in the earlier years to 571 per million in the later years of the last half-century. On the other hand, in THE LANCET of April 22nd, we showed that within the same period the mortality from pulmonary consumption at all ages in England and Wales had fallen from a rate of from 2579 to 1532 per million among males, and from 2774 to 1162 per million among females. It will thus be seen that in both cases the tendency of the English national statistics is to confirm American experience as set forth in Dr. Roswell Park's article in the *Practitioner*. There is, however, one aspect of the question which will, we are confident, be as gratifying to our correspondent as it is to ourselves—viz., that both in the United States and in Great Britain scientific agencies are already at work for the investigation of the nature and causes of this terrible malady; and we shall both concur in hoping that effective means may eventually be discovered of checking its progress—a feat which has already been accomplished in the case of that not less dreadful complaint pulmonary tuberculosis.

[1] THE LANCET, May 20th, 1899, p. 1376.

PUNITIVE MEASURES IN THE TREATMENT OF THE INSANE.

DR. T. DRAPES, medical superintendent of the Enniscorthy District Asylum, Ireland, contributes to the July number of the *Journal of Mental Science* an article on the subject—Are Punitive Measures Justifiable in Asylums? On this question it appears that great diversity of views exists amongst those having the care and treatment of the insane. Much of the disagreement seems to have arisen with regard to the meaning of the term "punishment." It would appear according to Dr. Drapes's contention that punishment may be of two kinds—positive or negative. "When we say to a child 'You have been naughty; you shall not have any sweets at dinner to-day,' or 'You shall not go for a ride with the others,' that is punishment of a negative kind, punishment by deprivation, but as certainly punishment to the child as if it took the positive form of bodily chastisement." Similarly to treat a lunatic patient who had been refractory or mischievous by stopping his regular allowance of tobacco or disallowing his attendance at the dance or circus was punishment. "To say," continues Dr. Drapes, "that a line of action which in the one case is called, and meant to be, punishment, should in the other be styled 'treatment' or 'aid to control' or any other plausible euphemism ..... is illogical." The punishments which are meted out are in immediate relation to the (faulty) behaviour, a relation which can be made quite intelligible to both the child and the insane. As degrees and depths of insanity are various and variable it would happen that what might be keenly felt and keenly realised by one patient would scarcely affect another. The milder grades and kinds of mental alienation, of oddity and of eccentricity, need not be inevitably associated with irresponsibility in the subject. On the other hand the progress of symptoms might continue till the patient—an actively suicidal melancholiac or a raving maniac—is in a condition of total mental and moral irresponsibility for his conduct. All grades and degrees of mental alienation—and *pari passu* of responsibility—may lie between these extremes. In paranoiacs there is often a relative mental soundness and integrity outside the special sphere of the particular or dominating delusion which he is under. "I have known,"

says Dr. Drapes, "many such cases to have very tender consciences on questions of right and wrong, who could not be induced to do a wrong action by any amount of persuasion." Cases of so-called moral insanity with little or no capacity for social sentiments and moral feelings, or with active perversions of a moral and sexual nature, are found in almost every asylum. "Many of them have been in gaol more than once. They belong to the borderland in which crime and insanity hold mingled sway. They are most difficult cases to deal with and in an asylum they not only act badly, often outrageously, themselves, but are active agents in demoralising others. *And it is in this class of patients that punitive measures are often attended with very good results.*" Several instances were given in illustration of these points. Mild methods, such as the deprivation of tea, of tobacco, and of amusements and dances, occasionally succeeded, but some of these cases required more radical measures, such as restraint by a camisole, or by gloves locked on the wrists, or by the application of the cold water-bath (including the cold shower-bath), often with the most salutary effects. In the discussion which followed the reading of the paper (at the spring meeting of the Irish Division of the Medico-Psychological Association in April, 1899) Mr. A. D. O'Connell Finegan recorded the good results of seclusion in one case where other means failed, Mr. P. Donnellan instanced cases where a little restraint and a little punishment (by deprivation) might be useful, and Dr. G. T. Revington acknowledged that they were justified in stopping all the pleasures and privileges of patients as a punitive measure. The infliction of any positive pain, however, could not be upheld. The deprivation of pleasure and seclusion he could approve of, and seclusion in a dark room was most effective in some cases.

THE DEATH OF PROFESSOR BUNSEN.

LAST week we announced the death of Professor Robert Wilhelm Bunsen at Heidelberg at the age of 88 years. Chemical science has thus sustained within a week the loss of two of its principal founders. We refer as well to the death of Sir Edward Frankland, a sketch of whose career we published in our last issue (p. 501). Some of the most brilliant discoveries recorded in the annals of chemistry are due to Bunsen. Some possess theoretical importance, others which will ever serve to keep his name in memory were of practical importance. Of theoretical importance we may mention his researches on the cacodyl compounds which established the existence of an arseniuretted radical in certain organic compounds. This discovery gave rise to the theory of radicals—groups behaving, so to speak, like elements upon which the superstructure of the enormous number of organic compounds now known to us rests. Bunsen succeeded Wöhler as Professor of Chemistry in the Polytechnic School at Cassel, and it was Wöhler, it will be remembered, who banished for ever the idea of vital force being concerned alone in the production of carbon compounds. He succeeded in constructing urea from purely inorganic materials, a synthesis which opened the way to a multiplicity of syntheses since successfully carried out by the patient labourers engaged in the field of organic research. Thus it is difficult to estimate the important influence which this achievement has exercised upon modern industries and upon modern life. Bunsen found the investigation of the architecture of organic compounds a fascinating study and his work bore fruit not less important than that of his *confrère* Wöhler. But his attention was soon absorbed by equally engaging subjects, and again his efforts were crowned with remarkable results which opened up an entirely new field of investigation. It is interesting to contemplate what the position of stellar chemistry would have been, or our extent of knowledge of the composition of the sun, stars, and heavenly bodies, had not Bunsen brought to bear the aid of the spectroscope upon analysis. This discovery led him to other discoveries and he announced the existence of hitherto unrecognised elements such as rubidium and caesium which were proved to occur in certain mineral waters. We now know the value of spectrum analysis in its application to the examination of rarefied gases under the influence of electric discharge, an application which has enabled chemists, as has been said, "to analyse the planetary system." We may even trace the discovery of helion by Professor Ramsay to the searching and selective power of the spectroscope, which Bunsen was the first to employ in microscopic chemical analysis. The enormous impetus which these and other discoveries have given to stellar chemistry it is still premature to estimate. Suffice it to add that fresh facts of the most interesting kind are daily being brought to light which tend to bring the chemistry of this and all other worlds under one classification. As is well known, in the discovery of spectrum analysis Bunsen was associated with Kirchoff. It is hardly necessary to mention some of the other fruits of Bunsen's labours, so well known have they become on account of their practical importance. As examples we may mention the battery, burner, vacuum pump, and photometer to be for ever known by his name. He was practically also the founder of gas analysis by volumetric methods, and it was Bunsen, again, who suggested that freshly precipitated ferric hydrate would serve as an antidote in cases of poisoning by arsenic. Bunsen's most important appointment was the professorship at Heidelberg, and the university became famous as one of the most celebrated schools of chemistry in Europe. This school proved to be the nucleus of a band of pupils and investigators who have since placed chemical science on the sound and scientific basis which it now occupies. Greater tribute than this to the memory of the great chemist could not be paid. His work, indeed, and the fruits thereof will last for aye—*monumentum aere perennius*.

STREET NOISES.

ON August 21st George Sims, a journalist, was charged at Clerkenwell Police-court with damaging a lamp. The circumstances of the case were that a mission service was being held outside the defendant's house and according to the conductor of the mission service the defendant rushed across the road, knocked over a lamp, and sat upon a harmonium. According to the defendant's evidence the noise woke him up. He went out and asked the preacher to stop and in the dark he fell against the harmonium and accidentally knocked over the lamp. Whether the occurrence was accidental or purposeful does not much matter. We entirely sympathise with the journalist whose rest was disturbed by the singing, preaching, and harmonium playing. Mr. Horace Smith is reported as saying to the defendant:—

I entirely sympathise with you in your endeavour to suppress noisy persons. If I had my way I would suppress all noise. It must be most annoying to hear people singing hymns or anything else when you want to rest. With regard to the facts of the case I am quite willing to believe the damage was accidental, but at the same time it must be understood that nothing justifies wilful damage. I sympathise with you. This sort of noise is intolerable and a mistake. I hope some way will be found of conducting these services without disturbing respectable people. At present the law is incomplete. There is no power given to a police magistrate to issue an injunction restraining people from pursuing such objectionable practices. Their intentions are good, but they do not benefit mankind under circumstances such as have been described.

As we have often said before, the necessary noises in a large city like London are quite bad enough without residents having to suffer the infliction of totally unnecessary noises. Street-preaching, "German" bands, piano-organs, and, above

all, the yelling newspaper vendor should be suppressed. Not that we wish to stop piano-organs from playing in a mews or somewhere where those who like the noise can amuse themselves by dancing without interfering with the traffic. Any householder should certainly have the power of ordering any organ or "German" band to move away at least a quarter of a mile from his house without the ridiculous formula of giving reasons. We again implore the London County Council to proceed with their unhappily abortive resolutions to make the streets less noisy.

THE DROUGHT IN WALES.

IN very many parts of South Wales the inhabitants are in the greatest straits for want of water. In the agricultural districts of Carmarthen and Haverfordwest, where no provision for storage has been made, there is a supply for only a few hours daily, while in some of the colliery townships of Glamorgan and Monmouthshire the supplies have nearly run out and only for two or three hours out of the 24 is there any water obtainable from the mains. At Pontypridd there are warnings from the water company of a restricted supply although there is storage for 220,000,000 gallons and the daily consumption at 20 gallons per head is about 1,500,000 gallons. In the upper part of the Rhondda Valley the storage supply has quite given out and the mains are only available for three hours daily. The inhabitants are expressing themselves in very indignant terms at this restriction, for it is nearly three years since the District Council obtained powers to enable them to make ample provision even for so prolonged a drought as the present one, but the realisation of the scheme is apparently as far off as ever. At Mountain Ash, Maesteg, Neath, Rhymney, and Brecon there is a public supply for only a few hours daily. At Merthyr no curtailment will be necessary for a few weeks and at Cardiff, Swansea, Aberdare, and Llanelly there is an ample supply for many weeks. The annual rainfall approaches 100 inches, or three times that of England and Wales, in some of the districts which are now the worst off.

THE TREATMENT OF THE UMBILICAL CORD.

MM. Le Gendre and Varnier have recorded an instructive case in the July number of the *Annales de Gynécologie et d'Obstétrique*. An infant at birth had the umbilical site treated with a dressing of sublimated cotton-wool. After 13 days the fragment of the cord was still attached and the nurse removed it by gentle traction. The child's temperature went up at once and continued elevated for five days while the skin was deeply reddened with erythema. This alarming attack was attributed, no doubt correctly, to septic absorption at the proximal attachment of the cord which had been disturbed in removing its adherent portion. M. Varnier also regarded the incident as conveying a warning against the use of the ordinary antiseptic dressing for the cord after birth. To this practice, which is attended in France by a cessation of the usual practice of bathing the infant after birth till the separation of the cord, he attributes the long-delayed separation of the latter. The best method of treating the umbilical cord is still an unsettled question. An excellent *résumé* of the whole subject appears in the *American Journal of Obstetrics* for July from the pen of Dr. R. L. Dickinson. From an examination of the statistics of various maternities it is quite certain that a large number of cases of septic infection of umbilical origin still occur, a number estimated by various writers at from 3½ to 22 per cent. In the face of such figures as these it is difficult to contend that the present methods of treating the umbilical cord are perfect. Dr. Dickinson thinks that the best mode of treatment consists in complete primary amputation of the cord with suturing of the flaps. We are not prepared to go so far as this, but at the same time we are inclined to regard the case recorded by MM. Le Gendre and Varnier as an example of the failure of an antiseptic dressing rather than as a warning against the use of such a dressing. We do not think that Professor Pinard's rule of not washing the infant until the separation of the cord is either a good one or at all necessary. There is no difficulty in washing a new-born child in such a way as to avoid any risk of infection at the umbilical site. A pad of antiseptic or, better still, aseptic gauze or wool without the use of any powder or lotion is the simplest and best dressing for the umbilical cord. Such a dressing is easily obtained, easily applied, and can be changed as often as may be necessary.

IS IT COMPULSORY TO GIVE DEATH CERTIFICATES?

A MEDICAL practitioner in Leicester, Mr. Crofts, has incurred some criticism from the coroner and by the press for giving a certificate of the cause of death in the case of a widow, aged 76 years, whose death was preceded by a fall in the street, causing abrasions, unconsciousness, and shock. Mr. Crofts said that he gave certificates in all cases, having seen a legal opinion to the effect that this was the duty of medical men. The coroner did not contradict this opinion but he thought the practice dangerous and was pleased to say that it was not common in Leicester. He said that had there been anything wrong in the case it would have been serious for Mr. Crofts. This is the right view to take of the question. The medical man is required to give a certificate in every case. But the law itself (Section 39, Births and Deaths Registration Act, 1874) contemplates the case of his having reasonable excuse for not giving a certificate and in the suggestions to medical practitioners prefacing the death certificates' book it is suggested that where there is any element of violence or suspected violence the practitioner should advise the friends to refer the case to the coroner. The rule is well understood and is generally acted on by medical men. And wisely, for obviously in some cases valuable time might be lost by not declining to give a certificate—a course of action which has the effect of throwing the responsibility of investigation of facts, with which the practitioner has no concern, as Mr. Crofts rightly said, on the coroner.

SEPTIC THROMBOSIS OF THE CAVERNOUS SINUS.

SEPTIC thrombosis of the cavernous sinus is rare. In the *Intercolonial Medical Journal of Australasia* of July 20th Dr. G. T. Howard has described the following case. A woman, aged 32 years, apparently was suffering from neuralgia of the left fifth nerve which had lasted for a few days. The temperature was normal. The pain got worse, she began to vomit, there were repeated and long-continued rigors followed by sweats, the left eyelid began to droop and the left pupil to dilate, and the vision was impaired. The temperature varied between 100° and 103° F., but the pulse remained about 72. Complete ptosis, mydriasis, and loss of reaction to light and accommodation and ophthalmoplegia externa, excepting feeble action of the external rectus, followed. There was just a suspicion of proptosis. Herpes appeared on the left nostril, the vision was impaired, and there was slight contraction of the field on the nasal side. There was no otorrhœa or ozæna. The optic disc was swollen, red, and indistinct, and the veins were engorged. The right eyelid and conjunctiva became markedly œdematous. The left conjunctiva became insensitive and deafness and tinnitus in both ears and slight paralysis of the left side of the face were observed. There were slight tenderness about the upper part of both

internal jugular veins and retraction of the head. The temperature varied from 103° to 106°, the rigors and sweats were frequent, general twitchings came on, and death occurred on the tenth day after the patient came under observation. Just before death the left eye and lid became œdematous like the right. At the necropsy necrosis of the upper surface of the basilar process of the occipital bone, with septic thrombosis of the transverse and left, and to a less degree of the right, cavernous sinuses, was found. There was foul pus along the left side of the base of the brain from the third to the eighth nerves. The staphylococcus pyogenes aureus and a bacillus resembling the colon bacillus were found. The practical absence of left proptosis was perhaps due to the establishment of the collateral circulation at an early period. No cause of the disease could be found.

DEATH OF SIR CHARLES LENNOX PEEL, G.C.B.

WE regret to hear of the death, somewhat sudden and pathetic, of Sir Charles Lennox Peel, G.C.B. Medical men have much reason to remember his constant courtesy and his equally constant endeavours to inform himself of the merits of questions involved in the legislation of 1886 and of all questions affecting the interests and the efficiency of the medical profession. It made no matter to Sir Charles Lennox Peel to which side they were attached—whether to that of the established medical authorities or to the yet unrepresented body of the profession. They were all alike welcomed and received help and suggestion in their endeavours. The Peels have figured so conspicuously in our public affairs that Sir Charles Lennox Peel in his quiet and important office was comparatively unseen by the world; but he was a fine illustration of the type of men who enable our statesmen to legislate and administer affairs.

THE DANGERS OF A "BICYCLE GYMKHANA."

A NEW outdoor amusement has recently been devised and is becoming very popular just now. It is known as a "bicycle gymkhana," and the events and amusements comprise open races, obstacle races, tricks, musical rides, carrying burdens, and team-driving. From beginning to end the impression cannot be banished from the mind that danger and risk to life and limb appear to be courted at every point. In the obstacle race, for one example, the riders of both sexes encounter in their career sacks stuffed with straw, high hurdles, see-saws, &c.; and the sport is varied in the case of male riders by their assuming at some point on the course a grotesque garb which severely interferes with the freedom of pedalling. As may be imagined, ugly spills are the rule and are often very serious. The strain on the bicycle is very great and none but the most superior "makes" survive the ordeal, while the breaking down of the machine is another source of accident. As an instance of another game, a team of six lady riders, two abreast, and bound by ribbons on the shoulders which terminate like a pair of reins in the hands of the gentleman driver, is driven at an alarming pace helter skelter round the course. Should any single rider fall out or break down disaster speedily overtakes the rest. Should another team be behind they share the same fate and the spectators are left in suspense as to whether any personal injury has been sustained amongst the living débris. The evil is greater for girls who are expected to lift their bicycles over high hurdles in an exciting race, and it is difficult to calculate what lasting and deep-seated mischief may be started by this apparently simple effort under the special circumstances. It should never be attempted by girls, and especially young growing girls, neither should other equally risky tasks which are attempted. The bicycle gymkhana is a pretty and engaging spectacle, but it should be shorn of barbarisms of this kind. In any case such sports on a bicycle are attended with danger, and it is comforting to think that there is generally a medical man amongst the audience or close at hand. His services are only too likely to be needed, for the view which we take is by no means an exaggerated one of the real dangers which lie in the path of those who participate in the bicycle gymkhana. There can be no sport without some element of risk, but in this pastime that risk passes from possibility to extreme probability.

THE REPORTED CASE OF "PLAGUE" AT A LONDON HOSPITAL.

A REPORT has been widely circulated during the past few days that a case of bubonic plague had been received at the Middlesex Hospital. Needless to say that the report is entirely unfounded. We have made inquiries at the hospital and we were informed that not only has no such case occurred at the hospital, but no case in any way resembling plague has been under treatment. It is to be regretted that the lay papers do not seek corroboration of such statements before making them public, as needless alarm is thereby occasioned.

MOSQUITOS AND MALARIA.

THE Liverpool School of Tropical Diseases may be congratulated on the success of the expedition which left Liverpool for Sierra Leone on July 29th. A telegram was received on August 21st from Major Ronald Ross, I.M.S., the leader of the expedition, announcing that he had discovered the malaria-bearing mosquito and requesting that the Government should be approached with the idea of sending out experts to investigate the possibility of taking measures to exterminate the pest. Mr. Chamberlain, we understand, has been communicated with, and we trust that the request for further help will be granted.

THE PULPIT AS A SEAT OF JUDGMENT.

THERE is something to be said in favour of the practice of the early Church in which the congregation could express an opinion as well as the preacher. The opposite system is especially hard nowadays when the preacher speaks so much with the air of a judge and deals accusation round so freely to a congregation whose mouths are shut. It has been reported to us that on Sunday night last in a suburban place of worship well known for its good works the preacher (a stranger) in depicting the sins of the time descanted on the need for greater honesty among business men. Not content with this he allowed himself to describe to his congregation the corruption of the medical profession "as illustrated by Lord Russell's speech on secret commissions." He led them to believe that chemists gave very high commissions to physicians for their recommendation and that practitioners did not hesitate to put into the hands of a weeping widow the card of an undertaker with whom they had a working arrangement for commissions! Not one fact was adduced in support of such monstrous charges by the minister of Him who said "Judge not that ye be not judged." It implies high restraint in any medical listeners to resist an immediate and indignant reply to accusations so unsupported and so incredible. The ordinarily intelligent hearer is apt to argue that if a minister's remarks are as weak and baseless as these he had better stay at home and study the Scriptures himself.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Surrey County District.—Dr. Edward Seaton, the medical officer of health of this district, expresses his regret that county annual reports are not as a rule published earlier—a regret which is doubtless shared by all his colleagues. Unfortunately, as he observes, custom and tradition in this matter are not so easily altered, and in dealing with county reports it has to be remembered that even if but one of the district reports is behindhand the county volume cannot well be published. Perhaps if the Local Government Board and the county councils were in actual practice to refuse to pay any contribution in cases in which the annual report did not arrive by a certain date there might be an improvement observed; but this treatment would be of no avail where a moiety of the salary is not paid out of the county funds, though in the case of all officers appointed after March, 1880, the annual report must be forwarded to the Local Government Board and the county councils whether or not there be part repayment. The estimated population of the administrative county of Surrey for 1898 was 475,000. The birth-rate for the year was 24·3 and the death-rate 13·3 per 1000. The "rural" death-rate was 14 and the "urban" death-rate was 12·9 per 1000, but the medical officer of health explains that the distinctions "urban" and "rural" are apt to be very misleading and that not much reliance should be placed upon them. Commenting upon the death-rates from enteric fever and phthisis Dr. Seaton remarks that "the attention given in official reports to typhoid as compared with consumption would seem to be in inverse proportion to their influence on the death-rate," but he adds that fortunately the sanitary measures necessary to reduce the former disease must also tend to reduce the latter. The county council have, we are glad to see, endeavoured to educate the public by issuing leaflets as to the control of phthisis. Dr. Seaton, whose name is, by his father's historical efforts when secretary of the Epidemiological Society, so intimately associated with compulsory vaccination, is careful to express a decided opinion upon the effect of the new Vaccination Act. Clearly, as he observes, it is too early to predict what may be the result and experience alone can answer the question. With one-mark vaccination Dr. Seaton has no sympathy and he quotes the remarks of Dr. Owen Coleman to which we recently referred in THE LANCET. There is one remedy for this inefficient vaccination and that is a determination on the part of the profession as a whole to have done with it. Surrey is, however, making provision for the separate isolation of small-pox and the Guildford Joint Hospital Board have long since set a good example by their efforts. The corporation of Croydon are also taking active steps in the same direction. In the matter of isolation accommodation the borough of Kingston still lags badly in the rear and the author of the report before us observes: "It is a very remarkable thing that Kingston is the only important district in or near South London in which the necessity for an isolation hospital is unrecognised." In discussing the important subject of water-supply Dr. Seaton draws attention to the fact that many of the district reports are deficient in detailed information as to the water-supply of individual houses. He thinks this omission is largely due to the not uncommon practice of merging the office of surveyor and sanitary inspector in the same individual, and he attributes this practice to the anxiety of the district councils to procure, through the sanitary inspector, repayment of half the *total* amount paid to this officer in his dual capacity. We think that Dr. Seaton must have inadvertently conveyed a wrong impression to his readers on this point. Repayment can only be claimed for half the amount paid to the sanitary inspector in his capacity of inspector. Under the heading of "Sanitation in Dwellings" the county medical officer of health expresses the opinion that work in the administrative county in this particular is not quite up to what it should be and we must hope that this hint will be acted upon during the present year. In the volume before us is contained a report on the methods of sewage disposal in operation in the county of Surrey. Dr. Seaton has evidently been at considerable trouble to procure from the surveyors of district councils a description of almost all the sewage works in the county, and the guide which is thus produced should be very useful to all those seeking information upon the subject.

Stirling County District.—The year 1898 has been a red-letter year in the annals of public health administration in Scotland in that the Public Health (Scotland) Act, 1897, was then first brought into operation. In the county of Stirling a vast amount of work has obviously been thrown upon its able medical officer of health, Dr. J. C. McVail, and to assist him in his efforts the staff of sanitary inspectors has been increased and reorganised. The county had in 1898 an estimated population of 72,870, a birth-rate of 33·7, and a death-rate of 16·3 per 1000. The zymotic attack rates ranged in the several parishes of the county from 22·12 to 0·00 per 1000 of the population, while the zymotic death-rate, which was 2·44 for the whole county, ranged in the parishes from 7·59 to 0·00 per 1000. Much vigilance is clearly being exercised in the county in the matter of river pollution prevention, more especially in the direction of the effluent from paper works and from coal-washings. The housing of potato-diggers and bark-peelers has given rise to anxiety and to overcrowding. There is always a difficulty in providing for the accommodation of temporary workpeople of this kind, whether they be potato-diggers, hop-pickers, or strawberry-gatherers, and although by-laws do something to control matters there must, we fear, be always some nuisance in connexion with these periodical outings. It is, however, in the matter of by-laws that the year now under review will remain memorable in the county of Stirling, and the joint committee appointed to draft them has been able, Dr. McVail tells us, to secure uniformity of administration throughout the county. If all these by-laws, which range from those relating to new buildings to those dealing with public conveyances, be carried out in practice the people of Stirlingshire will be grateful to the framers of the Public Health Act.

Birkenhead Urban District.—Notwithstanding that the Birkenhead population, estimated in 1898 at 113,094, live year by year under conditions of increased density (in 1898 there were 29·37 persons to the acre) the general death-rate continues to decrease—a fact which must be very gratifying to Dr. Sydney Marsden, the medical officer of health, who, on a far from liberal estimate, calculates that the lives saved during 1898 represent in money value £40,545. The housing of the working classes in Birkenhead is, however, not by any means what the medical officer of health would like to see it, and he laments that not a little of the property which has been erected within recent years will soon be "pesthouses little better than many of the filthy and insanitary dwellings now happily doomed to demolition." Birkenhead derives its water-supply from the new red sandstone and it is furnished to the inhabitants at the rate of 17 gallons per head; in quality it is said to be excellent. As regards the prevalence of tuberculosis in animals the report states that 53½ carcasses of beasts, 10 carcasses of pigs, and one carcass of a calf were seized and destroyed during 1898, while at the abattoirs, of 3805 pigs killed 55 were tuberculous, whereas of 12,714 sheep and lambs slaughtered but three were found to be thus affected. So, too, for the satisfaction of the anti-vaccinationist it may be recorded that of 616 calves killed only one was tuberculous, and it may be noted that even had this calf been vaccinated its tuberculosis would have been detected before the lymph had been ready for issue. Vaccinated calves are, after the lymph is collected, at once killed and examined, the lymph being destroyed if any sign of tubercle be detected in the carcass.

AUSTRALIA.

New South Wales Metropolitan Combined Sanitary Districts.—These districts include the city of Sydney and 47 other municipalities as well as certain other unincorporated districts. The population of the 48 municipalities is estimated at 450,870, with an incorporated area of 127,236 acres. In presenting his first annual report for the year 1898 Dr. W. G. Armstrong mentions that with the beginning of the year 1897 the Public Health Act of 1896 came into operation and by it extensive powers were conferred on local authorities in general and on municipal councils in particular. The Board of Health is the central sanitary authority for the country and in matters of public health

occupies a position analogous to that of the Local Government Board in England; it has no power to supplant local authorities except when they fail to perform their duties. The Public Health Act provides for the appointment of medical officers of health, and the appointment of such officers to the more populous parts of the country has been another development of the year. The total death-rate from all causes in the metropolitan combined districts was 13·95 per 1000; the death-rate from all zymotic diseases (typhoid fever, diphtheria, measles, influenza, whooping cough, scarlet fever, and diarrhœal diseases) was 3·32 per 1000; and that from tuberculous disease was 1·43 per 1000. These three death-rates for the urban district of Sydney (estimated population 98,250) were 17·39, 3·18, and 1·97 respectively. A local epidemic of typhoid fever occurred during the year at Burwood among the customers of a milk-vendor. The infection was not contained in the milk supplied to him by the milk company but was due to the milk-vessels being handled and the milk distributed by one or two of his employés who were suffering from typhoid fever.

Hunter River Combined Sanitary District (New South Wales).—In this district there are 17 municipalities with a combined area of 37,496 acres and a population of 66,030, the most important town being Newcastle, a shipping port of about 15,000 inhabitants. In addition to the municipalities there are extensive thinly-peopled tracts the population of which cannot be obtained with certainty. There are general hospitals in Newcastle (70 beds), West Maitland (30 beds), and Wallsend (21 beds), all of which admit patients suffering from typhoid fever, but there are no isolation hospitals for other infectious diseases. Cases of small-pox on board vessels arriving at Newcastle are taken by sea to the quarantine station at Sydney. A part of Newcastle is provided with sewers; in the remainder of the town and in the other municipalities conservancy systems are in use for dealing with excrement. Dr. Robert Dick makes some valuable suggestions for the improvement of the pail system and for rectifying various insanitary conditions which have come under his observation. The total number of deaths registered in the municipal districts (occurring amongst residents thereof) amounted to 857 for the year. The number of deaths from phthisis was 46 during the year, being a death-rate of 0·69 per 1000 of the population. The notifications of infectious disease were scarlet fever, 445 cases; diphtheria, 118 cases, and typhoid fever, 272 cases.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6866 births and 5620 deaths were registered during the week ending August 19th. The annual rate of mortality in these towns, which had been 24·6 and 24·3 per 1000 in the two preceding weeks, rose again last week to 25·7. In London the rate was 25·3 per 1000, while it averaged 25·9 in the 32 provincial towns. The lowest death-rates in these towns were 12·8 in Halifax, 13·6 in Huddersfield, 16·2 in Blackburn, and 18·3 in Sunderland; the highest rates were 32·5 in Portsmouth, 33·9 in Brighton, 35·2 in Wolverhampton, and 38·3 in Burnley. The 5620 deaths in these towns included 1765 which were referred to the principal zymotic diseases, against numbers increasing from 407 to 1597 in the seven preceding weeks; of these, 1450 resulted from diarrhœa, 109 from measles, 70 from whooping-cough, 67 from diphtheria, 38 from "fever" (principally enteric), 28 from scarlet fever, and three from small-pox. The lowest death-rates from these diseases were recorded in Bolton, Huddersfield, Halifax, Sunderland, and Newcastle; and the highest rates in Brighton, Portsmouth, Birmingham, Salford, and Burnley. The greatest mortality from measles occurred in Birmingham, Salford, Sheffield, and Burnley; from scarlet fever in Burnley; from whooping-cough in Plymouth, Leicester, and Burnley; and from diarrhœa in Brighton, Portsmouth, Wolverhampton, Birmingham, and Salford. The mortality from "fever" showed no marked excess in any of the large towns. The 67 deaths from diphtheria included 33 in London, 10 in Sheffield, and three in Leicester. Three fatal cases of small-pox were registered last week in Hull, but not one in any other of the 33 large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2612, against 2704 and 2674 at the end of the two preceding weeks; 245 new cases were admitted, against 307, 297, and 227 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 157 and 163 in the two preceding weeks, declined again to 148 last week, and were 20 below the corrected average. The causes of 46, or 0·8 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Nottingham, Salford, Leeds, and in 14 other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Blackburn, Bradford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·0 and 17·9 per 1000 in the two preceding weeks, rose again to 19·3 during the week ending August 19th, and was 6·4 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Aberdeen and 16·3 in Dundee to 21·5 in Leith and 25·4 in Perth. The 588 deaths in these towns included 124 which were referred to diarrhœa, 17 to measles, 10 to whooping-cough, six to scarlet fever, four to "fever," and two to diphtheria. In all, 163 deaths resulted from these principal zymotic diseases, against 108 and 104 in the two preceding weeks. These 163 deaths were equal to an annual rate of 5·3 per 1000, which was 2·8 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 77 and 70 in the two preceding weeks, rose again to 124 last week and included 64 in Glasgow, 18 in Edinburgh, and 11 in Paisley. The 17 deaths referred to measles exceeded by four the number in the preceding week and included 16 in Glasgow. The fatal cases of whooping-cough, which had been nine and eight in the two preceding weeks, rose again last week to 10, of which six occurred in Glasgow, two in Edinburgh, and two in Leith. The six deaths from scarlet fever slightly exceeded the numbers in recent weeks, and included four in Glasgow. The deaths referred to different forms of "fever," which had been six in each of the two preceding weeks, declined last week to four, of which two occurred in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 64 to 49 in the three preceding weeks, rose again last week to 51, but were 29 below the number in the corresponding period of last year. The causes of 25, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 33·3 and 31·9 per 1000 in the two preceding weeks, rose again to 34·9 during the week ending August 19th. During the past four weeks the death-rate in the city has averaged 32·2 per 1000, the rate during the same period being 24·0 in London and 17·2 in Edinburgh. The 234 deaths registered in Dublin during the week under notice exceeded by 20 the number in the preceding week and included 63 which were referred to the principal zymotic diseases, against 39, 65, and 62 in the three preceding weeks; of these 43 resulted from diarrhœa, 10 from measles, seven from whooping-cough, two from "fever," one from diphtheria, and not one either from small-pox or scarlet fever. These 63 deaths were equal to an annual rate of 9·4 per 1000, the zymotic death-rate during the same period being 7·0 in London and 3·8 in Edinburgh. The 43 deaths from diarrhœa corresponded with the number in the preceding week. The fatal cases of measles, which had been 18 and nine in the two preceding weeks, rose again to 10 last week. The seven deaths referred to whooping-cough showed a marked increase upon the numbers in recent weeks. The fatal cases of "fever," which had been three and five in the two preceding weeks, declined again to two last week. The mortality from diphtheria showed a decline from that in the preceding week. The 234 deaths in Dublin last week included 67 of infants under one year of age and 40 of persons aged upwards of 60 years; the deaths both of infants and of

elderly persons were slightly below the numbers recorded in the preceding week. Six inquest cases and five deaths from violence were registered; and 78, or one-third, of the deaths occurred in public institutions. The causes of 15, or more than 6 per cent., of the deaths in the city last week were not certified.

ASYLUM REPORTS.

Dorset County Asylum (Annual Report for 1898).—The average number of patients resident during the year amounted to 718, of whom 356 were males and 362 females. The average admission-rate for the past five years was 100 per annum and the average annual increase of admissions for the same period was 11 patients. A large number of the patients admitted were "suffering from confirmed mental disease without even the remotest hope or chance of recovery." Two of these were cases of acute delirium and both succumbed within a few days of admission; three others were suffering from congenital idiocy. The private patients admitted during the year were not nearly so favourable a class as those admitted in 1897. "For some considerable time it has only been possible to admit private patients as vacancies occur," and it is very evident that there was need of more accommodation for private patients. Hereditary predisposition was an important factor in the admissions. Many of the patients exhibited early mental confusion or partial dementia, and 33 per cent. of the admissions were tabulated as the outcome of a hereditary neurosis. Over 7 per cent. of the admissions had a direct and close connexion with the period of puberty or with that of the menopause. The recovery rate for 1898 was 10 per cent. under the rate for the previous year. "While great strides have been made in the methods of treatment and the housing of the insane there has been no corresponding rise in the recovery rate" in the asylums of the country, and this is attributed to a degeneration of the race. Among the total deaths, 52 in number, 28 were those of males and 24 those of females. Five deaths were due to general paralysis and two to cerebral meningitis, while pulmonary affections (phthisis, pneumonia, bronchitis, &c.) were responsible for 13 deaths. Seven patients died from senile decay and five from chronic Bright's disease. The Lunacy Commissioners in their report draw attention to the desirability of making timely additional provision to meet the average annual increase of patients seeking admission and of providing an entirely separate block for the private patients. An outbreak of dysentery occurred which attacked 17 persons (16 patients and a nurse) and proved fatal in the case of three patients. The origin of this could not be traced. The occurrence of such cases and of four cases of German measles among the patients emphasised the importance of an isolation block for infectious cases being provided, "without which they cannot be adequately dealt with." In view of the number of phthisical patients the absence of any mention of modern means for their treatment—isolation blocks, open-air treatment, and precaution as regards milk and meat-supply—is noticeable.

Royal Lunatic Asylum, Montrose (Annual Report for 1898).—The average annual population amounted to 660 patients—viz., 292 males and 368 females, an increase of 35 on the average of the previous year. There were 186 admissions, 89 of those admitted being males and 97 females; this was the largest number of admissions since the asylum was opened, and many applications had to be refused for want of room. A new branch asylum for private patients in course of erection would soon be ready for occupation. Hereditary predisposition was the chief feature in the causation of insanity among the cases admitted. "The next most potent causes were poverty and an insufficient dietary, combined in 9 per cent. of the admissions with dissipated habits." There were 53 deaths during the year, 10 being due to general paralysis, 12 to phthisis pulmonalis, and seven to senile decay. All care was taken, so far as the overcrowded state of the asylum permitted, to isolate phthisical cases and to carry out the open-air treatment. Important improvements were in progress—namely, the erection of new villas for convalescent cases and arrangements for the efficient disposal and treatment of sewage.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Fleet Surgeons: C. W. Buchanan-Hamilton to the *Prince George* and H. X. Browne to the *Unicorn*. Surgeons: A. A. J. McNabb to the *Cockatrice;* R. F. Clark to the *Empress of India;* M. C. Langford to the *Hazard;* F. Bolster to the *Ganges;* and M. H. Knapp to the *Gleaner*.

ROYAL ARMY MEDICAL CORPS.

Major A. W. P. Inman to be Physician and Surgeon, to the Royal Hospital, Kilmainham. Surgeon-Captain R. S. Smith, Army Medical Reserve, has taken over medical charge of troops and field hospital, Barry Camp.

Major Stephen H. Creagh retires from the service, receiving a gratuity.

INDIA AND THE INDIAN MEDICAL SERVICES.

Dr. Asutosh Mukhopadhyaya is appointed a Member of the Council of the Lieutenant-Governor of Bengal for the purpose of making Laws and Regulations in the Bengal Division of the Presidency of Fort William. Captain D. M. Davidson, Civil Surgeon, Mooltan, is transferred to Delhi. Lieutenant W. H. Kenrick, assumes charge of the Civil Medical duties of Kohat, relieving Captain H. J. K. Bamfield. Lieutenant Gidney assumes charge of the Civil Medical duties of Jhelum, relieving Lieutenant R. H. Price.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant John Henry Porteus Graham, 4th Volunteer Battalion the King's (Liverpool Regiment), to be Surgeon-Lieutenant.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant J. E. O'Connor to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 1st Gloucestershire: Lieutenant George Samuel James Boyd resigns his commission and is appointed Surgeon-Lieutenant. *Rifle:* 3rd Glamorgan: Surgeon-Captain E. Reid resigns his commission. 1st Volunteer Battalion, the Manchester Regiment: Surgeon-Captain W. M. Roocroft to be Surgeon-Major. 3rd Volunteer Battalion the Manchester Regiment: Albert Hilton, to be Surgeon-Lieutenant.

Fleet Surgeon Alfred Gideon Delmege, M.V.O., M.D., has been appointed Honorary Physician to the Prince of Wales, vice Sir Alexander Armstrong, K.C.B., deceased.

VACCINATION RETURNS.—At the meeting of the Gloucester Board of Guardians held on August 15th it was reported that during the latter half of the year 1898 the births numbered 852. Of this number 190 had been successfully vaccinated, 235 exemptions were granted, 238 were "unaccounted for," removals, postponements by medical certificates, and deaths unvaccinated accounting for the remainder.—At the meeting of the Thornbury (Gloucestershire) Board of Guardians held on August 18th it was reported that during the past six months in the Almondsbury district out of 67 children born 53 had been successfully vaccinated; in the Thornbury district out of 60 born 40 were successfully vaccinated; and in the Berkeley district out of 84 children born 59 had been successfully vaccinated. 20 exemption certificates were granted during the half year in the three districts.—At the meeting of the Wells (Somerset) Board of Guardians held on August 17th it was stated that the vaccination returns for the period from July to December, 1898, showed that there were 291 births in the district as compared with 270 in the corresponding period of 1897. Of these 166 were successfully vaccinated, against 151 in the corresponding period of 1897. Only six exemption certificates were granted. 66 children remained unvaccinated, against 70 in the preceding year.—During the 12 months which have elapsed since the conscience clause of the Vaccination Act came into force 779 applications for exemptions were made to the Bristol bench of magistrates. Of these 658 were granted and 121 refused. The Bristol magistrates have required to be satisfied by testimony on oath, and the applicant has been subjected in each case to considerable cross-questioning. The magistrate's clerk states that the want of intelligence and weak physique of the applicants were remarkable features.

Correspondence.

"Audi alteram partem."

HOSPITAL REFORM ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to state that the association are making arrangements to hold a conference in London during the second week in October next and that it has been proposed to set down for discussion the following subjects: (1) the inquiry system; (2) payments by patients; and (3) provident dispensaries. It is very desirable that representatives from Ireland and Scotland, as well as from the provincial centres of England and Wales, should attend the conference and I shall feel obliged if persons interested in the hospital question will take an early opportunity of communicating with me in order that a programme may be prepared some time beforehand.

I am, Sirs, yours faithfully,
T. GARRETT HORDER, Hon. Sec.

32, Windsor-place, Cardiff, August 22nd, 1899.

"ILLEGAL CERTIFICATES OF PROFICIENCY IN MEDICINE, SURGERY, AND MIDWIFERY."

To the Editors of THE LANCET.

SIRS,—Though by styling himself a "co-signatory" he shares, and thus diminishes, the slight and discredit he throws upon the signatories, and at the same time emphasises his censure of the documents, Mr. Horsley was not invited by the Corporate and Medical Reform Association to be, and could hardly have been, a "co-signatory" of the memorials to the General Medical Council against certification of unqualified practitioners, or, if he had signed them, have dealt in Council with his own memorials. It should be unnecessary to say that had we considered them "involved," "verbose," "inflated," or "bombastic" they would not have been so couched or issued, nor would any of us have signed them. We do not think many men would be found willing, as Mr. Horsley implies that he was, to sign documents of which they had such an opinion.

We regret Mr. Horsley's apparent desire to disparage memorials which enabled the profession to express its determined opposition to this mischievous certification of midwives and opticians and conveyed the considered views of a large body of his constituents, some at least of whom can scarcely be deemed his inferiors in logical acumen or proper respect for authority. Condemnation of documents so signed would carry more weight and better render the help we hoped from explanation if it were accompanied by any passage on which it may be based instead of by invective not altogether free from some apparent animus such as, we venture to think, scarcely worthy Mr. Horsley's high position in the esteem of his constituents.

The first memorial contained 1028 and the second 1326 words, equal respectively to one and one-third and one and three-quarter columns of THE LANCET or *British Medical Journal*—brief space to fully state in new lights constitutional questions of the first importance, to which, in less serviceable forms, hundreds, or perhaps thousands, of pages and memorials of much greater length have, with far less result, been during many years devoted. It is unfortunate that the text of the memorials is not available to your readers, and Mr. Horsley affords no clue to the passages or expressions to which he takes exception; but if every word of each memorial merited one or other of his hyperbolical adjectives we as yet perceive no reason why the faults of our memorials should relieve him of the duty of moving to rescind the Council's sanction of such certification if he considered it illegal. His opinion as to this most important question of legality, as well as some useful illustrations of our faults in the memorials, will still oblige us, having, indeed, been our objects in this correspondence.

We regret that Mr. Horsley did not take definite action to rescind, instead of merely demanding unnecessary inquiry into, proceedings of the Council that we certainly hold, and hope that he holds, to be illegal. We regard his abstention from such action with the more concern in the light of his advocacy of a policy of surrender on the question of midwives registration; because if the Bill of the British Medical Association became law certification of midwives would at once become legal and the recission he speaks of useless. We do not believe there is any real public demand for, or any justification of, such a measure, nor any necessity for such a policy of surrender, which is inconsistent with Mr. Horsley's election pledges, and we hope to have his invaluable support in the determined resistance we are organising to such mischievous and retrogressive legislation, to which, we understand, he yields only on the mistaken ground that it is inevitable. The gravest obstacles to such resistance are the successive "surrenders" of the principles at stake, (1) by the General Medical Council; (2) by the Council of the British Medical Association; (3 and last), and most injurious of all, by Mr. Horsley himself should he adhere to that mistaken policy instead of uniting in the "uncompromising resistance" unanimously called for by the Stratford meeting and thus ensuring its success.

We are, Sirs, your obedient servants,
JAMES A. MYRTLE.
J. HIGHAM HILL.
T. GRANVILLE HOCKRIDGE.
F. LORIMER HART.
R. F. TOMLIN.
TOM R. TAYLOR.

Guilford-street, W.C., August 21st, 1899.

ERYTHROL TETRANITRATE: A CORRECTION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 19th, p. 533, in the report of the proceedings of the Section of Pharmacology and Therapeutics at the meeting of the British Medical Association at Portsmouth, it is stated that I had a patient taking as much as one drachm of erythrol tetranitrate twice a day. What I did say was that one of my patients had taken half a drachm in 24 hours, but this in divided doses, the largest dose being six grains. I seldom, however, find it necessary to give more than one grain three times a day. This dose, as a rule, most effectually wards off attacks of angina pectoris.

I am, Sirs, yours faithfully,
Cambridge, August 21st, 1899. J. B. BRADBURY.

THE ADDRESS ON TUBERCULOSIS AT PORTSMOUTH.

To the Editors of THE LANCET.

SIRS,—Into your excellent report of my address on Tuberculosis at Portsmouth a few errors have, shall I say almost necessarily, crept in. The spray which Flügge found so virulent was not made of the deposit from the sputum, but is the spray from the coughing patient. Hæmoptysis does not "always" arise at the tuberculous nodule—it may be "aneurysmal" for instance—but it often does. Out of 4000 consecutive necropsies made at Leipsic under the care of Birch-Hirschfeld in 40 per cent. tubercle or its traces were found, not by any means always pulmonary. I therefore suggested not that a number thus enormous suffer from pulmonary phthisis, latent or manifest, but that of the great many who do in no small number its passage through mild stages to obliteration might be unnoted, the patient being regarded as but anæmic, overworked, or a little "off colour" otherwise, and the true nature of his disease unsuspected.

I am, Sirs, yours faithfully,
Cambridge, August 22nd, 1899. T. CLIFFORD ALLBUTT.

"THE EXTIRPATION OF MALARIA."

To the Editors of THE LANCET.

SIRS,—I have read with much interest Major Ronald Ross's lecture on the Extirpation of Malaria. There are one or two questions I would like to ask him concerning matters not fully explained in the lecture:—1. By what method does the plasmodium malariæ pass from the mosquito into the blood of man? 2. Does he deny that there are any ways

in which the poison of malaria can be conveyed to man other than by mosquito bites? 3. How does the mosquito theory fall in with the belief in freedom from malaria at high altitudes?

I am, Sirs, yours faithfully,
J. H. TULL WALSH, Major, I.M.S.

Berhampur, Bengal, July 30th, 1899.

A LEICESTER LAYMAN ON LEICESTER GUARDIANS AND THE ANTI-VACCINATIONISTS.

To the Editors of THE LANCET.

SIRS,—As a Leicester man bred and born I should like to make it known that everybody in Leicester is *not* on the side of the guardians or the anti-vaccination crusaders. We have, I am sorry to say, cranks and crazes of all kinds in the town and some of us try our best to reason with them, so far as the local press will permit us. With cranks and crazes other than the anti-vaccinationists it would be out of place to deal in THE LANCET, but as to the guardians I do not think they are so strongly supported by the people as they would have us believe. The people, as a rule, are fond of free shows and quite 20,000 attended to see the guardians come back from London. A fund was opened for their law expenses, but as there have only appeared three dozen subscribers' names it shows that the guardians are standing on their own bottom and the subscription list must be a knockdown blow to their cause. As to the Anti-vaccination leagues throughout the country, they will have to be laid by the heels in the same way as the leagues in Ireland were dealt with before the country was restored to a peaceful footing. These anti-vaccination leagues are the cause of much mischief, terror, coercion, and intimidation, and ought to be suppressed by the Government; they frighten the uneducated on the cruel results of vaccination; they hold those of opposite views up to ridicule and scorn—in fact, boycott them; they would coerce everybody into their belief; and they decry the medical profession, yet stoop to receive gratis treatment at local infirmaries and cadge recommendations to get there. The majority of anti-vaccinationists on the Leicester Board of Guardians is a sufficient proof of the doings of the anti-vaccination leagues—good men who composed the board have been forced not to seek re-election by these leaguers.

I am, Sirs, yours faithfully,
August 21st, 1899. A LEICESTER MAN.

PROFESSOR OGSTON'S ADDRESS IN SURGERY AT THE BRITISH MEDICAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—If Professor Ogston has given offence to the members of the naval and medical services he has equally done so in his speech to their civilian *confrères*. Even if his assertion that the "civil aid at present employed in various stations throughout the country is of an inferior kind" is justified by his experience of graduates and diplomates "over the border" he cannot possibly be in a position to publish such a wholesale condemnation of other men he can know nothing about. How can he judge of practitioners "throughout the country"? Nor is he altogether logical, for after insisting very rightly that members of the medical services should have "study leave" he recommends them to spend this time in seeking instruction from civilians in civilian hospitals. Is this civilian aid or not? Moreover, when he suggests that it would be as absurd for the Army Medical Department to depend on civilian aid in emergencies as it would be to employ civilians with the Royal Engineers he evidently ignores the extensive permanent civilian branch attached to the Engineer Department. Treated on those sound surgical principles of which Professor Ogston is himself such a distinguished exponent and with access to Longmore's or Stevenson's works, the decently qualified civilian is perhaps as capable of treating such "surgical emergencies" as most of his military or naval brethren.

In these "piping times of peace" the majority of service officers have had no better training; indeed, as the *British Medical Journal* points out, the civilian surgeon may in a given time see more shot wounds than his military colleagues. We cannot, civilians or otherwise, all rise to the position of Professor Ogston or to that of his brother hospital surgeons, admirable as that condition of affairs would be for all parties concerned, but the care of a large station hospital, some 3000 or 4000 officers and men, their wives and families, a lying-in hospital, infectious hospital, and prison is scarcely compatible with a life of professional "stagnation." I unhesitatingly assert after some 18 months' constant association with members of the Army Medical Service that the average of their professional capacity is higher than that of a man who has spent the same number of years in decent class general practice. Doubtless many reforms are needed in the services as they are indeed in the profession at large, but to belittle alike the professional reputations of naval, military, and civilian practitioners to obtain them is unjust and in bad taste.

I remain, Sirs, yours faithfully,
"A BROKEN REED" (M.A., M.D.,
August 22nd, 1899. F.R.C.P., &c.).

"NOBODY'S CHILD."

To the Editors of THE LANCET.

SIRS,—The writer of the note "Nobody's Child" in THE LANCET of August 19th is evidently not acquainted with the provisions of the Infant Life Protection Act of 1897. Section V. of this Act requires that "any person retaining or receiving an infant under the age of two years on consideration of a sum of money not exceeding twenty pounds paid down, and without any agreement for further payment, as value for the care and bringing up of the said infant ..... shall within 48 hours from the time of receiving such infant give notice of the fact to the local authority." The adoption of the infant Rackham was duly notified to the London County Council. The infant was regularly inspected by one of the Council's inspectors under this Act and it was well cared for. Evidence to this effect was given at the inquest by the inspector, but the evidence not being of a sensational character was omitted in the newspaper reports. The promoters of the Act strongly urged that lying-in houses should be registered. At present the Council's inspector calls at these houses and elicits what information he can get as to the fate of the infants born there, but information is often refused. The most usual way of disposing of these infants is by advertising in ——. An advertisement of the following kind is often seen in this paper: "Will any kind person adopt baby expected next month? Small premium given." During last year 16 persons notified to the London County Council the adoption of infants under Section V.

I am, Sirs, yours faithfully,
August 22nd, 1899. G. B. J.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Serious Development of the Plague in India.—Report on the Plague in Calcutta.

THE threatenings of fresh outbursts of the plague which I have foreshadowed during the past few weeks has been succeeded by explosions of great virulence. Poona has been the chief centre of this activity, but Belgaum, Nasik, and Satara have also been sufferers. In studying the microbic characters of this disease one is apt to neglect its epidemiological features, and while much has been written on the history of individual cases little has been observed on the course of its local development and still less on its general rise and fall. A few weeks ago a minimum of deaths from plague in India since its first appearance was recorded. There is now a most virulent outbreak at Poona in which the death-rate for the past week exceeds 340 per 1000 per annum from plague alone. The disease has reappeared in Bangalore and the total deaths from plague for the whole of India have risen from 2078 last week to 2687 during the past seven days. There are signs, moreover, that Bombay is again threatened. The general mortality has risen considerably and there is no other reason to account for it. Apparently one of the untoward results of the failure of the monsoon is the great increase in the number of rats in Bombay. They had been much reduced in

number during the outbreaks of plague, but the absence of the rains is thought to have left them undisturbed in the sewers and other underground resorts, and as they breed every six or eight weeks and produce from 10 to 12 in every nest, it does not take long for them to recover lost ground. Dead rats have been found in large numbers. Communication of infection by rats has been held by many to be essential to the maintenance of an epidemic and therefore this extraordinary increase in the rat population which has been recently noticed has given ground for the greatest anxiety.

In Poona three Europeans have died and seven others have been attacked. The extent and virulence of this outbreak appear unparalleled. The worst week in Bombay chronicled a death-rate of 125 per 1000 per annum, but at Poona it has been over 340 per 1000 per annum. On the other hand, the death-rate in the worst week in Calcutta during the month of April was less than the rate of 65 per 1000 per annum. The failure of the monsoon in Western India is causing great anxiety and the weather continues exceptional, being fine, hot, and close. The sky is not even overcast.

The recorded number of cases of plague in Calcutta has suddenly increased, but this is due to the adoption of a different system of registration. The small numbers previously returned were not a true index of the amount of plague in the city and it has now been determined to include in the plague deaths all those which were previously returned as suspected. Even by this method of counting the number of cases of plague cannot be made large.

The work of the Government Plague Research Laboratory has increased very considerably and the institution has been removed to the old Government House, Parel, Bombay, which has been admirably fitted up for the purpose by the Government of India and is now entirely under its control.

The report of the Imperial Bacteriologist for 1898–99 states that considerable quantities of mallein and tuberculin are being manufactured in the laboratory for veterinary use. The hope is expressed that arrangements may be made for dairy and other cattle to be tested with tuberculin so as to ascertain the extent of tuberculous disease amongst cattle in India. It is common knowledge that tuberculosis is very prevalent amongst human beings in India, and the disease is probably derived from tuberculous milk or meat.

A report on the plague in Calcutta has just been issued. It shows that the recent outbreak was considerably more severe and extensive than the one last year, but the deaths from plague are numbered at only 1223. A corrected mortality which includes suspected cases brings the total to over 3000. This even is a small number and the problem is still unsolved why Calcutta should have escaped so easily. Another curious feature is that notwithstanding plague was imported into 15 districts outside Calcutta it never developed very much and caused less than 500 deaths. The case death-rate of plague in Calcutta (viz., 91·54 per cent.) is probably not real, but is due to mild cases being concealed and hence not reported. Concealment of cases appears to have been practised on a large scale.

As an example of the small value of even high-caste native assistance I give the following extract: "Patients were not encouraged by the vigilance committees to go to these hospitals [ward and caste] in most instances even when they were ready for occupation as the committees would then have had to incur further expense in appointing a hospital staff to look after the patients. They preferred suggesting to them that they should go to the large general hospitals." With regard to disinfection, it is worth recording that there is not a single instance of a second case of plague having occurred in the same room after its disinfection although other cases may have subsequently occurred in other parts of the same house.

The report refers to the general policy of the measures adopted, and Major Green, I.M.S., says: "I am of opinion that with more stringent measures there would have been a far more systematic suppression of cases by disposing of the dead anyhow and by giving false information." "As well there would have been an active opposition to disinfection and to moving patients, and although a few more cases would have been able to be shown as 'died in hospital' the disinfection of places where plague patients had died would have been less and the probability of the disease spreading greater, not taking into account the scare and dislocation of trade that would have been caused and the race animosities aroused." Almost every house where a suspicious death has occurred has been disinfected. Beyond this the plague regulations have been of the mildest possible character and have caused no interference with the people. The results have certainly been satisfactory, but at the same time it is extremely improbable that they have been the consequence of the measures adopted.

August 3rd.

THE COLLIERY SURGEONS' STRIKE.

THE BATTLE OF THE CLUBS IN THE BOLTON AND DISTRICT COALFIELDS.

(BY OUR SPECIAL COMMISSIONER.)

A MEDICAL strike in which close upon 100 surgeons are either directly or indirectly involved is an event which must of necessity cause no small amount of excitement, agitation, interest, and surprise. That such a strike should have been brought about after a very short period of preliminary organisation and be carried forward with absolute unanimity and discipline, is a still more remarkable fact. But to understand clearly the position it is necessary to trace the present movement to its origin. It was initiated by Mr. J. H. Marsh, of Little Hulton, a mining district near Bolton. Mr. Marsh had long nursed in his mind a strong desire to unite the members of the medical profession by means of an association which would have for its first object the ending of the rivalries and animosities that so disastrously divided the medical practitioners in his own and in the surrounding districts. Some practitioners had been close neighbours for years and yet had never entered each other's houses or exchanged salutations when they chanced to meet. A slight grievance, generally due to misrepresentation, would, in the absence of any intermediary to explain away the difference, lead to a permanent feud. Under such circumstances practitioners did not scruple to undersell each other, and especially in respect to contract work the tariffs were lowered to an absurd figure. Still, before any action could be taken, it was necessary that some special emergency or pretext should arise. This opportunity was provided by the enactment of the Workmen's Compensation Act. There could be no doubt but that this law would bring about a great modification in the conditions governing the treatment of miners who are the victims of accidents. Profiting by this circumstance Mr. Marsh invited all the practitioners in his district to attend a meeting which was held in his house on June 17th, 1898. 18 local practitioners were present, and those who were prevented from attending wrote expressing their sympathy and approval. As a rule such meetings result in the adoption of a resolution, more or less vague, approving the principle of forming a medical union, and appointing a committee to investigate the ways and means and to prepare a project. In this instance much more rapid progress was made. Articles of association were at once drawn up and signed by all present. A representative managing committee was also elected with Dr. W. Duncan of Tyldesley as chairman and Mr. Marsh as honorary secretary. The Walkden, Farnworth, and Atherton districts were also representatives. At Pendlebury a medical union had been formed just a fortnight previously which was limited to that district and this union sent its treasurer and secretary as representatives. Such was the character of the first meeting held, and out of it sprang, fully fledged, the medical union now known as the Colliery Surgeons' Association.

Formerly there was a system of insurance against accidents which in most cases was not voluntary but was enforced by the employers. All employés had to subscribe and the employers added to the amount thus raised a sum equal to 25 per cent. or more of the total. A board of management on which the employers and the working miners were represented selected the surgeons who were to attend in case of accidents, for the insurance only applied to accidents and not to sickness. In some districts one single surgeon was engaged for a mine and the work was not thrown open to any other local practitioner. This system of insurance included all the surface workers, that is to say, the men who were not exposed to any particular risk, and it was the payments received from the

latter which helped to swell the total obtained and which rendered the financial position of the surgeons engaged somewhat more acceptable. When the Workmen's Compensation Act came into force, however, the employers naturally ceased to subscribe to this system of insurance against accidents and many of the accident clubs were forthwith dissolved and the money in hand was divided among the members. There is, however, this difficulty arising out of the Act—namely, that the employers are not liable to give any compensation unless the person injured is invalided for more than a fortnight. What then was to become of the worker during that fortnight? The pitmen therefore began to organise clubs of their own to be worked independently of any help from their employers, so as to provide medical and financial aid in case of minor accidents or during the first fortnight when the accident was of a more serious character. But of course it was only those who were exposed to constant risk of accidents who cared to join these new clubs. The surface workers and the officials employed in and about mines so rarely suffer from accidents that they would not participate and the employers being no longer concerned in the matter did not force them to do so. Thus these new clubs do not possess the elements which are most remunerative so far as their medical officers are concerned.

While this work of reconstituting clubs or accident societies as these particular colliery clubs are often called, was progressing, the Colliery Surgeons' Association discussed the question of fees. For many years the rate of payment for attending accidents had been considered most unsatisfactory. The main cause of grievance was that the subscriptions which were paid by the miners were the same though the prevalence of accidents varied very considerably. Thus it worked out at from 13*s.* 6*d.* to 7*s.* 9*d.* per case in the mines owned by the Bridgewater trustees and at 15*s.* per case among the members of the Pendlebury colliery clubs. In practice this means that the more a surgeon has to do the less he is paid, and that the less he has to do the more he is paid. That this is grossly unfair is beyond question. It was therefore agreed that the payment should be in accordance with the work done and was fixed at 15*s.* per case per annum, excepting in cases where surgeons held single and valuable appointments, when it would be found expedient not to interfere with such existing contracts. These old contracts are for the most part based on the payment by the miners of 2*s.* 6*d.* per head per annum, and where accidents are not frequent this is fairly remunerative. Thus in the Wigan district there are solitary appointments—that is, where one single surgeon is employed at one particular colliery—which bring in from £1 to £1 5*s.* per accident, and naturally the surgeons who hold such posts are not particularly anxious to give them up in exchange for a uniform rate of payment fixed at 15*s.* per case. 15*s.* is an improvement on the general average, but it is not so in the case of mines where accidents rarely occur. An exception was also made in favour of the Lancashire and Cheshire Permanent Relief Society which has been in existence some 25 years and which has many branches or agencies in the districts covered by the Colliery Surgeons' Association. This society has paid thousands of pounds to its medical officers, it has always held the most courteous relations with its surgeons, and has ever been ready to meet any complaint that was made. It has 121 agencies and over 40,000 members and its investments exceed £120,000, though its financial position is now shaken because the employers no longer subscribe. Nevertheless, the payments which are received from the Lancashire and Cheshire Permanent Relief Society are not satisfactory, but it is an old-established institution and has shown much consideration towards its medical staff. Besides some members of its staff derive very good incomes from their connexion with it, so that in any case for the moment matters are allowed to stand. On the other hand, the Colliery Surgeons' Association is quite determined not to allow any new clubs to be formed on the old lines.

At the onset the association was very successful. During the first six months that followed the formation of the medical union all the new accident clubs agreed to pay 15*s.* per case. The medical union at the same time extended its field of action. It consisted of the 64 medical practitioners residing in the districts mentioned above; but as it was found that many of the pits touched other districts the practitioners residing in these latter were also approached and they readily responded. The older Pendlebury society was affiliated, the Leigh, Bolton, Westhoughton, Little Lever, Radcliffe, and other districts all joined, and now all the surgeons on the Bolton and district coalfields are in union. It is estimated that there are 100 members of the Colliery Surgeons' Association, and this extension was completed in the course of three months. Not a single practitioner refused to join. Never was a union so quickly formed; never was support so unhesitatingly and unanimously given. All manner of old feuds and enmities were forgotten. The medical practitioners brought together by their union learnt to esteem each other and old rivals became fast friends. So large had the association become that it had to be divided into districts with a chairman and a secretary for each district. These two officials for each district constitute the executive of the association and keep the whole region informed as to what is going on. The general secretary has now less work to do and is no longer called upon to advise or to arbitrate in every petty local dispute or difficulty which may arise, but the matter is referred to the local secretaries. At first the general secretary had to attend five or six meetings per week and to do an appalling amount of correspondence. To cover the expense of this correspondence all the members pay an annual subscription of 5*s.* So far this small tribute to the union has sufficed and there has been no need to make any special levy; but if a larger sum was required, for instance, to fight some case in the law courts or to compensate a surgeon who had been made to suffer through adhering to the rules of the union, there is so much enthusiasm felt and such devotion to the cause of the union that little doubt is entertained but that the money would be forthcoming. This remark is, perhaps, the more necessary as the period of smooth sailing is now over and there is trouble ahead.

The Colliery Surgeons' Association had, as we have seen, substituted for the old system of 2*s.* 6*d.* annual payments by each member insured whether accidents occurred or not, the simple payment of 15*s.* per annum for each accident and in exchange for this sum they undertook not only to attend to the patient but to give him two certificates weekly free of charge. Formerly one certificate only was given and a charge of 6*d.* was made when a second certificate was required. As most miners belong to two clubs the 6*d.* for the extra certificate had often to be paid. Though these terms had been accepted by all the newly-formed accident societies it was found that the officials of some of these societies were advising their members not to call in the surgeons for small injuries but to treat their wounds themselves and allowed them a week's pay though they were thus not able to produce the usual medical certificate. For the sake of saving the 15*s.* which the surgeon would demand the men not only ran the risk of losing their claim to compensation under the Act, but also aggravated their suffering and exposed themselves to all the risks resulting from incompetent treatment. Experience has proved that this danger was not imaginary, but that injury has actually resulted therefrom. It is also to be noted that if the surgeons are only to attend serious cases then the fee of 15*s.* no longer suffices. But for a number of minor cases to swell up the receipts the surgeons would be considerably out of pocket. At the end of six months the accident club connected with the mines which are held by the Bridgewater Trust and a new club called the Wigan and District Miners' Permanent Relief Society cancelled their contract with the Colliery Surgeons' Association. Yet there are practical proofs that the terms fixed by the surgeons are not exorbitant and can easily be met by the miners. Thus, the Brackley branch of the new Bridgewater Trust Society did not approve of the policy pursued by their board. They seceded from the main body, formed a separate club, and signed a contract with the Colliery Surgeons' Association. The result has been that after discharging all their liabilities and paying the 15*s.* fees to the surgeons their last yearly balance shows that they have £60 in hand though they have only 300 members. This club has just renewed its contract with the Colliery Surgeons Association for the next 12 months. Thus, we find here a body of men who evidently are satisfied with the conditions which are brought forward by the surgeons. The men at the Linnyshaw Colliery are also satisfied. They have likewise refused to cancel their contract with the Colliery Surgeons' Association and have therefore seceded from the parent society and renewed their contract with the surgeons. Before the passing of the Workmen's Compensation Act the old society in connexion with the Bridgewater Trust consisted of 5000 members, of whom 1000 were surface workers, yard men, &c., among whom

hardly any accidents occurred, yet both surface workmen and pitmen paid 3*s.* a year. The new society consists of less than 2000 members and they are nearly all pitmen — that is to say, they belong to the category of workmen among whom accidents are of most frequent occurrence. The position is therefore no longer the same; and as these men have not renewed their contract the members of the Colliery Surgeons' Association will only attend them as private patients. But if the competitive system had been allowed to continue this would not have been a solution; for the surgeons would have undersold each other and most of the work would have gone to the person who charged the lowest fees. Consequently a tariff has been agreed upon; it has been printed and distributed among all the colliers. It is as follows:—

COLLIERY SURGEONS' ASSOCIATION.

Scale of fees adopted for accident attendance on members of colliery societies who have *not* a contract with the above association. 2*s.* each visit. 2*s.* each medicine, lotion, &c., six ounces or more. 1*s.* each liniment, &c., two ounces or less. 1*s.* each ordinary dressing. 1*s.* each certificate for accident societies. 6*d.* for each certificate for sick societies.

Amputations, fractures, dislocations, &c., as per extra fees allowed by the Poor-law Board to union medical officers. £5 each compound fracture or dislocation of the thigh or leg; amputation of leg, arm, foot, or hand; operation for strangulated hernia. £3 for simple fracture or dislocation of thigh or leg and compound fracture of arm. £2 amputation of a finger or toe. £1 other fracture or dislocation.

This scale of fees clearly shows that the profit arising from the uniform fee of 15*s.* charged where a contract exists is derived from the large proportion of minor cases. If only serious cases were to be treated by the surgeons then they would experience a heavy loss. At the above scale of charges the remuneration per accident would average somewhere between £1 10*s.* to £2.

The new Wigan and District Miners' Permanent Relief Society is ruled by a board that meets at Wigan and there are branches at Leigh, Bolton, Tyldesley, Atherton, and Westhoughton. Some of these branches have unanimously adopted resolutions declaring that the terms which are offered by the Colliery Surgeons' Association are fair, just, and generous, and have desired to renew them, but they were prevented from doing so by the board which from Wigan governs the society in a somewhat autocratic manner. On April 25th last the general secretary of this board wrote the following letter to Mr. Marsh, the general secretary of the Colliery Surgeons' Association:—

DEAR SIR,—I am instructed to inform you that the following resolutions were unanimously passed at our board meeting held at Wigan on Saturday last. "That we cannot accept any agreement with medicals unless it be at the rate of 2*s.* 6*d.* per head per annum." "All our agencies must see that the above is carried out in its entirety." "That we advertise for medical men and they be placed in districts where the local medicals refuse the above terms."

This society has in all 63 agencies spread over Lancashire and Cheshire and it paid during the last six months of 1898 £724 14*s.* 6*d.* to its surgeons. The surgeons had attended 1694 accident cases and this makes an average of 8*s.* 7¼*d.* per case. The average of the Lancashire and Cheshire Permanent Relief Society amounts to nearly 15*s.*; but the amount of payment made by the new Wigan and District Miners' Permanent Relief Society varied from 1*s.* 2*d.*, in the Golborne agency to £1 8*s.* 4*d.* per case in the Blainscough agency.[1] Thus the surgeon or surgeons in the latter district received 23 times more than those in the former districts, yet both parties were paid by the same board. Evidently, if the surgeons are to be paid by means of annual subscriptions these subscriptions should be pooled in a centre and the accident money thus collected should be divided in equal ratio so that every surgeon would be paid the same sum per case that he attended. Nor is there any reason why the new Wigan and District Miners' Permanent Relief Society should not pay higher medical fees. Here is the balance-sheet of the society for the last six months of 1898. Expenditure: Local agencies committee fees, £61 15*s.* 3*d.*; local agencies official salaries, £494 3*s.* 9½*d.*; expenses of board of management, £74 7*s.* 11*d.*; secretary's salary, £45 10*s.*; secretary's travelling expenses, £6 14*s.* 7½*d.*; secretary's parcels, &c., £14 16*s.* 5½*d.*; sundries, deputations, £3 8*s.* 4*d.*; postal orders, stamps for local agencies, £20 15*s.* 11*d.*; P.O. treasurer, £2 8*s.*; printing bill, press, &c., £5 1*s.* 9*d.*; coal, gas, &c., £1 12*s.* 6*d.* The total working expenses thus amount to £729 14*s.* 6½*d.* which is a trifle more than the sum paid to the surgeons. But then rule 10 says:—

Each ordinary member of the board shall be paid 5*s.* and his travelling expenses for each occasion on which he attends a meeting of the board.

Thus these miners received 5*s.* for attending a board meeting while the surgeon of the Golborne district only received 1*s.* 2*d.* for every patient he attended, however severe the accident might be and whatever the number of visits and length of time the treatment. After the surgeons' fees, amounting to £724 14*s.* 6*d.*, the balance-sheets record £6 10*s.* given as widows' allowances, £18 12*s.* 6*d.* children's allowances, £50 14*s.* 9*d* death claims, &c., and disablement £2028 14*s.* 2*d.* With the working expenses enumerated above the total expenditure amounted to £3559 0*s.* 5½*d.* The total income is set down at £4975 18*s.* 1*d.*, so that the accounts for the six months show a balance in hand of £1416 17*s.* 7½*d.* As by paying £724 14*s.* 6*d.* to the surgeons this was equal to 8*s.* 7½*d.* per case, the balance in hand is sufficient to have raised this sum to the 15*s.* claimed by the Colliery Surgeons' Association, if the rate of accidents during the six months was not below the normal rate and particularly as there is room for economy in the charges made for working expenses. Such is the position of the accident society against which the colliery surgeons are now on strike.

After the Board of the Wigan and District Miners' Permanent Relief Society had sent to the Colliery Surgeons' Association the letter quoted above they attempted to temporise. Great efforts were also made to make some of the local surgeons secede from the Colliery Surgeons' Association, but without success in any one case, the surgeons all remaining faithful to their union. The Board of the Wigan and District Miners' Permanent Relief Society succeeded, however, in securing the services of an outsider. No sooner was it ascertained that negotiations were pending with this practitioner than he was written to by Mr. Marsh, on behalf of the Colliery Surgeons' Association, and informed as to the situation. Nevertheless, he came and took a house at Leigh. The local secretary of the Colliery Surgeons' Association at once called on him and explained that all the local practitioners without exception were in union and were unanimous. If he chose to settle in their district he would be welcomed by all, but he must join their union and observe their rules. As he was understood to have assented his name was put up and he was forthwith elected a member of the Colliery Surgeons' Association. But he wrote that it was a mistake and that he would not belong to the Medical Union. Thereupon on June 23rd the following resolutions were adopted:—

1. That, owing to the Board of the Wigan and District Miners' Permanent Relief Society employing surgeons not recognised by their fellow practitioners (non-union men), and threatening to import other surgeons, we, the members of the Colliery Surgeons' Association, refuse to attend any member of the Wigan and District Miners' Permanent Relief Society for accident, privately or otherwise. This to take effect after sufficient notice has been given to the general secretary and provided no satisfactory arrangement be made in the meantime.
2. That a Colliery Surgeons' Association Accident Club be at once formed.
3. That printed circulars, with full details and explanations be issued and delivered to miners, also inviting them to public meetings to be held in each district of the Colliery Surgeons' Association.
4. That this notice be sent to each branch of the Wigan and District Miners' Permanent Relief Society.

The circular which has been distributed among the miners gives various details as to the points at issue and after giving the text of these resolutions adds:—

A copy of the above resolutions having been sent to the general secretary of the Wigan and District Miners' Permanent Relief Society, and no terms having been agreed upon, the surgeons have been compelled to carry out their resolutions, and they accordingly give you notice that on and after July 17th, 1899, they will not on any terms attend any man in case of accident who is a member of the Wigan District Miners' Permanent Relief Society unless covered by existing contract.

Thus the strike began with all due form and from 2000 to 3000 miners are affected. These reside for the most part in the Westhoughton, Bolton, Leigh, Atherton, and Tyldesley districts so it is the surgeons in these same districts who are directly concerned. But the members of the association who practise in the other neighbouring districts may also be applied to by the miners and they will likewise have to refuse attendance. An attempt has been made to represent this strike of the colliery

[1] Since writing the above a public statement has been made that this argument does not apply because the surgeon in the Blainscough agency was only appointed towards the end of the six months in question. But the argument applies to other districts though the figures are not quite so disproportionate. Thus at Norley the average payment per case was £1 2*s.* 8*d.* and at Rainford only 3*s.* 1*d.*

surgeons as an inhuman proceeding. Imaginary pictures have been painted of a mangled collier lying prostrate and bleeding, his life trembling in the balance, while the obdurate surgeon refuses to give any help because he is on strike and must obey the law of his union. Of course such a supposition is absolutely false and a libel on the profession. That such inhuman conduct is possible and authorised by the union has been authoritatively and publicly denied by Dr. Wm. Duncan as chairman of the Colliery Surgeons' Association. Naturally in such a circumstance first aid would be readily and gratuitously given. But the wound once dressed, and danger to life met by all available means the patient would be told that he must go to the medical man of his own society for the continuation of his treatment. The surgeons on strike would for instance secure a severed artery but would not attend to a sprain. These miners have taken upon themselves to import a surgeon; they must therefore go to that surgeon. If the distance is great they must put up with the inconveniences arising out of their own deliberate action. Though trade unionists they have tried to break up the surgeons' union and must not therefore expect help from those whom they are doing their best to injure. It is only when the danger is very urgent, when it is a question of life and death, that for the sake of humanity the hostilities may cease just for a moment. Fortunately there have been so far no serious accidents since the commencement of the strike. But, nevertheless, the colliery proprietors are beginning to manifest some signs of alarm; not with regard to serious urgent cases, which as explained would receive first aid, but with regard to minor cases. The miners who belong to the Wigan and District Miners' Permanent Relief Society, against whom the surgeons are on strike, live in cottages spread over an area which is perhaps some five miles in length. How can one single surgeon suffice to attend patients living at such distances? Is there not some danger that some of the minor injuries may become more serious in consequence of the topographical difficulties in the way of proper attendance? which means that the employers will perhaps have heavier compensation to pay. This consideration makes the employers anxious to see the dispute terminated at an early date. The miners on their side are far from satisfied. The majority of the men have no wish to quarrel with the doctors and are beginning to grumble at the difficulties in which they have been led by the board of their society. The surgeons have over and over again invited the men to attend meetings to discuss the points at issue. A fairly good feeling seems to prevail and the quarrel is more with the board than with the members of the society. Under such circumstances hopes are entertained that the dispute will not last long. Nor are the conditions made by the Colliery Surgeons' Association all to the advantage of the surgeons. The fact that they offer two certificates instead of one means a saving of 6*d.* per week to many miners. Then the harmony between the members of the Colliery Surgeons' Association is so well established that instead of competing against each other they are ever ready to help one another and to attend to each other's cases. Thus if an accident happens the patient sends for his surgeon, but the surgeon is not at home, formerly the patient would have had to wait till his return; now the patient may call in the next nearest surgeon who will give the first care and then hand the case back to his colleague when the latter arrives. This certainty of immediate attendance is of great practical advantage to the patient, and it is of importance that it should be understood that the cessation of competition between medical men is of advantage to the public as well as to the members of the profession. Taking all these facts into consideration it will be seen that there are many issues involved in this movement which are of great importance and its progress will, therefore, be watched with interest by the medical world.

Little Hulton, near Bolton, August 20th.

ROYAL CORNWALL INFIRMARY, TRURO.—The annual meeting of the friends of this institution was held on August 14th under the presidency of Colonel Tremayne. The annual report showed that during 1898 there had been 416 in-patients admitted, as against 369 in the preceding year. The average duration of residence was 27 days, against 31 days in 1897. The average daily number of in-patients was 31. The out-patients numbered 650, an increase of 149 compared with the preceding year. The receipts amounted to about £2100, as against £1858 in 1897. The expenditure was £1900, being nearly £100 more than last year.

SANITATION IN CALCUTTA.

(FROM A CORRESPONDENT.)

IV.[1]

GREAT difficulties have had to be met and overcome in providing for the drainage of Calcutta. These are mainly the result of the natural characters of the land upon which the town is built. Calcutta lies on the bank of the river Hugli and the mean height of the surface of the town is only from three to five feet above the average level of high-water in that river and is actually below high-water level when the river is at its fullest in the rainy season.

The town is built entirely on the left or eastern bank of the river and its highest part occupies a line running parallel with, and a short distance from, the shore of the river. From this slightly elevated ridge the trend of the land is downwards to the east (and consequently away from the river); and this slope—a very gradual one—has been taken advantage of in draining the city. The highest point in the sewers is in the ridge referred to and the fall is eastward to an ultimate outlet in the (tidal) Salt Lakes, some four or five miles to the east of the city.

The first detailed report upon a scheme for sewering Calcutta was drawn up by the engineer to the corporation (the late Mr. Clark) in 1855. In March of the following year this scheme was submitted to a special committee appointed by Government for the purpose. The committee consisted of two Engineer officers in the Government service, the chairman of the Calcutta Chamber of Commerce, the chief engineer to the East Indian Railway Company, and a barrister. The committee, it will be noted, contained no medical man among its members. This committee sat for a year, and in 1857 the scheme was submitted to an engineer of repute then in Calcutta (Mr. Rendel) for further report. This gentleman proposed to entirely alter the arrangements for the outfall and to conduct the sewers to the river Hugli instead of to the Salt Lakes. The discussion of this proposal delayed the scheme for some 10 months; but at the end of that time the suggested alteration of the outfall was unanimously rejected and in 1859 Government sanctioned the commencement as an experiment of the works as originally designed.

The proposal to carry the sewage into the river was destined, however, once again to make its appearance and to lead to further discussion and delay. This was in 1861 when a loud protest against the use of the Salt Lakes for the outfall was published by the then engineer to the Calcutta and South-Eastern Railway Company. In this protest the superior claims of the river Hugli for the purpose were again urged. Another special committee was appointed consisting of two medical men and an Engineer officer. Each member of the committee submitted a separate report and it was found that they all agreed that the principles upon which the drainage scheme had been so far carried out were correct. This settled finally the rival claims of river and Salt Lakes and the Government of Bengal immediately issued instructions for the adoption of the original scheme, which had hitherto been experimental only, for the drainage of the entire urban part of the town. The further steps in the extension of the sewerage system need scarcely be given in detail here. It will suffice to say that the urban wards are now for the greater part adequately provided with sewers and that the system of sewers is being gradually extended to the suburban wards.

The sewers in Calcutta are constructed on the combined system—that is to say, they conduct both sewage and storm waters. On the outskirts of the town (at Palmer's Bridge) is a pumping station where the sewage is pumped from the low-level town sewers into a large high-level sewer which conducts it for a distance of some 8000 feet to the outlet at the Salt Lakes. Hitherto there has been considerable obstruction at the outfall, principally owing to the tides, and in the successive reports of the health officer references will be found to the consequent occurrence of deposits in the sewers. This difficulty is now being overcome by the construction (by means of embankments) of an immense tank or reservoir into which the sewer contents will be discharged at periods of high tide. This tank will be about

[1] Nos. I., II., and III. were published in THE LANCET of July 22nd (p. 240) and 29th (p. 306) and August 12th, 1899 (p. 431), respectively.

five miles in length and 600 feet in breadth. It will contain the sewage during the period when the outflow is obstructed by the tides and by an arrangement of flood-gates the fluid will be allowed to escape only during periods of low tide.

The pump and high-level sewers hitherto in use have been found to be inadequate for the ever-increasing quantity of sewage and new ones are now under construction. The new sewer will be eight feet and seven feet in its longest and shortest diameters, instead of seven feet and six feet respectively, as the old one is. At present the quantity of sewage dealt with daily averages about 15,000,000 gallons (or some 5,000,000 gallons less than the daily supply of filtered water alone). It is expected that the quantity will ere long rise to 20,000,000 gallons. When the present pumps are working at full pressure the rapidity of flow in the high-level sewer is about three feet per second. The temperature of the sewage on the morning when the writer visited the works (in the "cool" season) was 74° F. In the hot weather the temperature must be very considerably higher.

These very brief notes do not claim to give in any degree a complete description of the arrangements in connexion with the outfall of the Calcutta sewage. They cannot be expected to give the reader more than a very general idea of the difficulties which the problem of sewage disposal in that city presented or of the skilful and costly nature of the attempt to overcome those difficulties. It is not intended here to enter into discussion of matters so highly technical as the geological and geographical obstacles which lay in the way of the engineers, of the difficulties due to an extremely varying rainfall, of the adequacy or inadequacy of the method by which these have been met, or of the general relation of all these factors to the health of the inhabitants of the city. It is rather with the other end of the sewerage system—the arrangements within the house—that the present paper will be concerned.

The central parts of the native town have sewers now in most, if not in all, of the more important thoroughfares and a considerable proportion of the houses are connected with them. Even, however, in the sewered streets there are still a very large number of houses which are not connected with the sewers. The explanation put forward of this fact is that until the unfiltered water-supply is so far completed that every house can be connected with it it is useless to connect such houses with the sewers. It follows, therefore, that no measure is more urgently called for than the immediate provision of water-supply (be it of filtered or be it of unfiltered water) to every inhabited house in order that every house may be connected with the sewers. For until this can be done very many houses must remain, as at present, with no other privy accommodation than the highly objectionable unconnected or *mehter*-served privy.

The *mehter*-served privy at its best consists of a stone or cement platform with a hole in the middle and a chamber or "vault" below. In the vault is a *gumlah* or earthenware vessel to receive the excreta. The urine and the water used by all natives for purposes of ablution escape by a separate channel and do not enter the *gumlah*. The channel usually opens through the wall of the privy and the fluids run down the outside of the wall and flow to a grated inlet to the drains which is generally at no great distance. Very frequently the vault of a privy contains two, three, or even more *gumlahs*, which serve for similar privies on upper storeys; the excreta in such cases drop from the upper storeys through brick-built shafts in the structure of the house. The drop may be anything from 10 to 40 or more feet. The *gumlahs* are supposed to be cleansed daily by the municipal *mehters* or scavengers. It will be readily gathered that a privy of this description, even when properly constructed, well-lighted and ventilated, and kept as clean as possible, is not, and cannot be, a thoroughly sanitary structure. But even these minimum conditions are practically never met with. The privy is almost invariably without light or ventilation; it generally forms part of the very structure of the house; and it is usually in a filthy and neglected state. In "drop-privies" the shaft from the upper storeys becomes of necessity coated on the inside with filth; *gumlahs* are constantly shifted out of position, or full to overflowing, or broken, or absent altogether, and the vault becomes a reeking cesspool, the contents of which undermine and soak into the very foundations of the house or filter out into the road or narrow passage outside. The urine, trickling down the outside of the privy wall, forms an offensive, slimy deposit. The condition into which many of these structures get is not only intolerably disgusting, but is a menace to health of the gravest possible character. The *mehter* is expected to cleanse the *gumlahs* by scraping out the contents with a small brass *lotah*, or, more often, an empty kerosene tin. However conscientiously the man may endeavour to carry out his loathsome duties (and many of them do perform their work most conscientiously) the method is so radically wrong that anything like cleanliness can never be attained.

In villages and unsewered towns in India some form of *mehter*-served privy will always be required, and if constructed in an outbuilding and on proper principles and if they are intelligently used and cleansed there is no reasonable objection to privies of this description. But in a densely overcrowded town such as Calcutta, and constructed, used, and "cleansed" in the manner just briefly described, these structures are as dangerous to health as they are offensive to every sense. It is scarcely necessary to add that under no circumstances can a "drop-privy" be otherwise than an offence and a danger.

The *mehter* removes the privy contents in covered pails or buckets, well-tarred both inside and outside; these pails are the property of the municipality. The contents are ultimately disposed of at the so-called "pail-depôts." A pail-depôt consists of a chamber with a cemented floor in the centre of which is a sunk and grated opening to the sewers. A mechanical or hose flush is usually provided. This part of the removal of excreta from dry privies is on the whole satisfactorily performed.

It would be easy to dwell in detail upon the many other defects of *mehter*-served privies. But enough has been said upon this unpleasant topic to make it clear that until every one of these structures shall be finally abolished Calcutta cannot hope to be an even approximately sanitary city. This end will not be attained until every inhabited house is connected both with the water-supply and with the sewers.

In India a water-closet is scarcely ever met with. In European houses in India a commode is always found in the bathroom which is attached to every bedroom. The commode is emptied by the house-*mehter*. The contents are washed down an opening into the drains (usually trapped and provided with a flush) which will generally be found in an outhouse in some part of the compound or garden of the house. This method of removal of excreta works on the whole as satisfactorily as any other method yet devised. In native houses, on the other hand, where connexion with the water-supply and with the sewers has led to the abolition of the *mehter*-served privy, the "connected privy" is the structure invariably met with. It consists of a basin sunk in the floor and provided with a flushing-rim and cistern. It differs from a water-closet solely in the absence of a raised seat and in the sunken position of the basin or pan. The sanitary principles involved in its structure differ in no respect from those involved in the structure of water-closets.

Before pointing out the defects usually met with in connected privies there is still one more form of privy not uncommonly met with which requires brief mention. This is the so-called "drop-connected privy." It is usually an old "drop-privy" in which the chamber or vault on the ground floor, instead of containing *gumlahs*, has a trapped connexion with the drains. The shaft or shafts from the upper storeys have been retained. It is difficult to see what advantage this form of privy possesses. It violates almost every cardinal principle upon which the removal of excreta should be conducted. The excreta, instead of being carried by an outside pipe, drop through a shaft inside the house to a chamber on the ground floor. It is usually only by hand-flushing that they are washed thence through the opening to the drains. Hand-flushing can never be rightly trusted to. Very often the chamber becomes a mere cesspool. The shafts act as admirable funnels to convey the effluvia from the vault, or, in the not uncommon instances where the trap on the drain-opening in the vault becomes unsealed, sewer-air, directly to each of the upper floors of the house.

To return to the ordinary form of connected privy it must be regretfully admitted that in Calcutta a very large proportion of such privies are improperly constructed or are not in working order. To begin with, the privy is almost invariably imperfectly lighted and imperfectly ventilated. In very many instances it is unprovided with any opening besides the door and when the door is closed it is absolutely unlit and unventilated. In the absence of light cleanliness is impossible and the state of the floor in many connected

privies is intolerably filthy. Very frequently there is no cistern or no water connexion, or the pipes have been tampered with, or there is no flushing rim to the basin, or the flush is out of order and refuses to act. The trap under the basin is frequently dry and allows sewer-air to escape directly into the house. Faults, too, are all too common in connexion with the soil-pipes. In not a few native houses with connected privies the soil-pipe is carried down inside the house; in many it is not carried up above the roof for ventilation; anti-syphonage pipes are the rare exception. In a small number of good-class houses where the sanitary arrangements have been recently overhauled these matters have been properly attended to and the privies and soil-pipes in these houses leave little to be desired. But such houses are not merely a small minority—they are a rare exception.

In brief, the defects in the house arrangements in connexion with the Calcutta drainage scheme are not only not few in number, but they are grave in character. Their prevalence is the result of many different causes. One of these causes is the unquestionable fact that the present time is one of transition, neither drainage scheme nor water-supply being yet finally completed. A second cause is the absence or incompleteness of the education of the native inhabitants in the proper use and requirements of such sanitary structures as connected privies. A third and no less potent cause is the inadequacy of the by-laws now in force to meet the just demands of sanitation in regard to these structures and, it must be added, the imperfect enforcement of these by-laws even in their present form.

The water system of removing excreta has been accepted by the Calcutta Municipality as the best method of dealing with this difficult matter. This solution of the problem was one which required no little courage to carry out and one which demanded a very great financial outlay. Few will be found to question that in a densely crowded city such as the native parts of Calcutta it was the right solution. But in accepting it the municipality at the same time accepted the responsibility of carrying out the scheme in such a manner that it should not itself be a nuisance and a source of danger. The provision of a system of sewers and drains and the connexion of the houses with them is not in itself sufficient to ensure the complete and sanitary removal of excreta. The proper construction, lighting, and ventilation of connected privies, the existence of an efficient and always working flush, and the correct structure, arrangement, and ventilation of traps, soil-pipes, and the like are essential factors in any water-system of removal of excreta. If these factors are not under the more or less complete control of the sanitary authority a sewerage system may be as potent for evil as it should be, when properly constructed and controlled, potent for good.

In order to attain the desired end it will be necessary first to complete the systems of drainage and water-supply in order that every house may have a properly-working connected privy and that the last excuse for retaining *mehter*-served privies may disappear. Secondly, it will be necessary to raise the level of knowledge of the native inhabitants of the city in the use and requirements of connected privies. Finally, it will be, above all, necessary to obtain a more definitely worded and more stringent code of by-laws relating to these structures than that now in force. An amended code of by-laws should be made applicable not only to privies to be newly constructed, but also to those already in use, and it should be unhesitatingly and unintermittently enforced.

Reference has just been made to the lack of knowledge among the native inhabitants of Indian cities as to the use and requirements of connected privies. It need scarcely be said that this lack of knowledge is not confined solely to the use of these particular structures. It is one of the greatest obstacles to all sanitary reform in India. Some form of modern sanitary appliance is essential in the sanitation of crowded cities, whether in India or in Europe, and all forms of sanitary appliance require a certain amount of knowledge and intelligence in their use. If abused or allowed to get out of repair they may themselves become serious offences and even disseminators of disease. It is only too obvious that they are constantly abused and allowed to get out of repair in Calcutta. This is very largely due to an absence of knowledge on the part of the people as to the nature and use of the appliances in question and as to the ease with which in many instances faults or defects could be remedied by themselves. As an illustration may be mentioned the very common occurrence of a choked surface drain-inlet. This little accident, which may lead to most offensive results, such as the conversion of a narrow passage between houses or of half a courtyard into a lake of liquid filth, can in nine cases out of ten be remedied by the householder. The thrusting of a stick down the grating, or the flushing of the trap with a few buckets of water, or the payment to a coolie of an anna or two to thrust down his hand and unchoke the trap will generally suffice to remedy the evil. But in too many instances the native householder is ignorant of these simple remedies and will waste days in writing to the municipality to obtain their aid. In not a few instances, it must be added, the intensely litigious spirit so common to the more educated natives prompts them to waste not only days but weeks in a futile correspondence as to whose duty it is to unchoke the drain, while in the meantime the results of the choke are becoming daily and hourly more offensive.

There are innumerable other ways in which the customs, habits, ways of life, and general views of the native inhabitants of Calcutta stand in the way of the sanitary improvement of the city. Many of these must, it is to be feared, remain practically insuperable, while others will probably continue for many generations to bar the road to reform. The prospect of more rapid improvement in sanitary matters is, however, by no means an altogether hopeless one. Cleanliness of person is a fundamental element in the Hindu religion. That it does not always go with cleanliness of house and surroundings is unfortunately too true, but a large number of instances may be met with where the interior of a hut occupied by the very poorest class of coolies is spotlessly clean and neat—in striking and often pathetic contrast to the filth outside. Another very hopeful feature is the fact that many householders, both educated and uneducated, welcome gladly the visit of a medical or sanitary inspector, that they willingly show every portion of their premises and even themselves call attention to sanitary defects, and that they appear unfeignedly glad to receive information upon remedial measures within their own reach. An attempt was, it is said, made within recent years to recognise and encourage these hopeful signs by the distribution of leaflets and other methods of instruction. There is abundant evidence that an organised campaign of popular sanitary education is not only urgently needed but would be really welcomed by large numbers of the inhabitants. Systematic public lectures and addresses to both males and females (the lectures to the two sexes would require to be separate, but it is quite as important to educate the women as the men), the distribution or sale of leaflets and pamphlets, and the exhibition of working models of sanitary appliances would all aid in raising the level of knowledge of the people in sanitary matters. Measures of this nature are much needed to supplement the only other measures now available—namely, those involved in the enforcement of the sanitary clauses of the Municipal Act and the by-laws based upon them. Both clauses and by-laws, as has been more than once pointed out, require to be more definitely and in some instances more stringently worded, and they also require to be more persistently and unintermittently enforced than at present. When firmly and justly enforced such clauses and by-laws are themselves one of the most powerful of educative forces, but they become doubly so when supplemented by voluntary measures, such as those briefly enumerated—measures, that is to say, of direct education in sanitation of a people who are to all intents and purposes without knowledge in these matters.

An attempt has been made in these papers to describe, of necessity briefly, a few of the principal features in the present state of sanitation in Calcutta. It has been necessary to point out—while recognising the fact that the municipality has carried out, and is carrying out, certain large and expensive measures, such as the water-supplies and the drainage scheme, to meet some of the sanitary requirements of the city—that there are many directions in which improvements are loudly called for, and an endeavour has been made to indicate the nature of those improvements. It was stated in the opening sentence of the first paper that the sanitary condition of Calcutta is, in fact, at the present moment very far from ideal. The statement is fully borne out by the high death-rates which prevail in the city.

In briefly discussing the death-rates of Calcutta (with which for the present these notes will come to an end) it will be necessary to deal with the figures for the year 1897, those of the year 1898 which are available being vitiated by the

prevalence of plague and the consequent flight of an enormous proportion (amounting probably to one-third) of the population. In 1897 the death-rate, uncorrected for age and sex distribution of the population, of urban Calcutta was 32·2 per 1000, that of suburban Calcutta was 44·9 per 1000, and that of the entire town was 36·1 per 1000. The mortality among females was 42·4 per 1000 and among males it was 32·9 per 1000. The infantile mortality, or deaths of children under one year of age, reckoned per 1000 births, was 356·5. The mortality among Christians was 22·6; among Muhammadans, 32·1; among Hindus, 38·7; and among "other classes" no less than 51·9 per 1000. The death-rates in various wards of the city varied between 10·8 (in a mainly European quarter) and 49 9 per 1000 (in one of the most insanitary suburban wards). It must also be pointed out that in almost every instance the mortality rates, of which the above figures are the expression for one year only, have shown a steady increase in recent years. That is to say, that the death-rate of Calcutta, from whatever point of view it be examined, is gradually growing higher instead of lower.

High as many of the above figures are they are largely exceeded when smaller areas of the town are taken as the basis of calculation. It may be shown without any very great trouble that the death-rates are very unevenly distributed in different parts of the city. This has already been seen when the mortality rates in the various wards were quoted; but it becomes more striking when still smaller areas of the town are dealt with. The writer recently worked out the death-rates of 24 "census blocks," constituting together one of the most insanitary wards of the city. The blocks varied in size from two or three acres to seven or eight acres. It was found that in 1897 the death-rate exceeded 40 per 1000 in seven of the blocks; that in five it was over 50 per 1000, and that in two it was as high as 62·52 and 63·36 per 1000 respectively. The infantile mortality in this ward reached the immensely high figures of 792 per 1000 births for males, 571 per 1000 for females, and 677 per 1000 for both sexes.

The death-rates from individual diseases, into the details of which it is not proposed to enter here, show almost without exception a more or less steady increase during recent years, the figures reaching their highest point in the year in question. In no group of diseases is this more marked than in the group of "fevers." Under this head, it is to be noted, are included not only deaths from the various forms of intermittent fevers, but also those from any febrile disease which the relatives of the deceased have not been able to recognise as cholera, small-pox, or other more or less easily recognisable "fever." The very marked rise in the death-rate from this group of causes is one of the least satisfactory features in the situation. The number of deaths registered from "fevers" very nearly doubled itself between the years 1889 and 1897. Dr. Simpson, the late health officer of Calcutta, ascribed this rise largely to the defects in the newly introduced system of sewers and drains and more particularly to the obstructed outfall and consequent deposit in the sewers, and to the occasional contamination of the soil by leakage from defective sewers. It will be interesting to observe whether the completion of the new arrangements at the outfall briefly referred to above will be followed by a corresponding fall in the deaths from "fevers." There can be little question that a large number of such deaths are the result of enteric fever and other diseases caused by the extremely defective house arrangements described in the present paper and that there is quite as great need of dealing effectively with this as with the other end of the sewerage system.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Infirmary Site.

A SPECIAL meeting of the Manchester City Council is about to consider the terms of the sale of the infirmary site to the Corporation. There is considerable difference of opinion as to the terms and the *City News*, a widely-read weekly paper, has an article strongly adverse to them and taking a somewhat similar view to that given in my last letter. "From every point of view the decision of the Special Committee is to be regretted. The Corporation should buy the property out and out or leave it alone. There is not the slightest necessity for the planting of an emergency hospital in the position proposed [i.e., on the present infirmary site]. No one would suggest that such a building should be erected on land worth £50,000. An eligible site could be acquired for one-fifth the money. It is a wrongful use of public money to spend such a sum on a mere ornamental site for a charitable institution."

Hospital Inquiry at Horwich.

An inquiry was held at Horwich on August 18th by a committee of the Lancashire County Council in connexion with the proposed establishment of an isolation hospital for the urban districts of Horwich, Westhoughton, and Blackrod. The chairman intimated that the county council would probably make the three districts a joint hospital area. The hospital is to be at Fall Birch and is estimated to cost with the site between £5000 and £6000. There will be provision for 30 beds.

The Hospital Saturday Movement at Bolton.

The Hospital Saturday movement at Bolton has grown from £628 for 1881—the year of its initiation—to £3120 3*s.* for 1899, this last being a "very handsome advance" on last year's contribution. Altogether since 1881 the movement has realised £30,000 for the infirmary.

Oldham and Vaccination.

In his first annual report as medical officer of health for the borough of Oldham Dr. Wilkinson mentions a curious fact—namely, that several of those who went through the trouble of obtaining exemption certificates took their children a few days afterwards to a medical man and had them vaccinated. It may be remembered that Oldham became notorious, if not famous, for the wholesale way in which certificates of exemption were obtained under the new Vaccination Act. It is to be feared that these cases of repentance are, however, comparatively few.

August 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dublin Sanitary Association and Mountjoy-square.

SOME weeks ago Sir Charles Cameron, Executive Sanitary Officer of Dublin, sent a circular to the residents in Mountjoy-square inquiring whether they were in favour of the square being thrown open to the public. One of the residents addressed a letter to the morning papers protesting against the action of Sir Charles Cameron and stigmatising it as "an audacious proceeding." At the weekly meeting of the Public Health Committee in the Municipal Buildings the following was stated in connexion with the proposed opening of the square:—

> The Committee, acting on behalf of the Dublin sanitary authority, and having charge of the provisions of the Open Spaces Act, are of opinion that the Commissioners of Mountjoy-square have not fairly treated the proposal to open that square to the public. The circular letter which by direction of Committee Sir Charles Cameron, executive sanitary officer, sent to the inhabitants of the square merely asked whether or not they were in favour of opening the square to the public. How such a request could be stigmatised as an "audacious" proceeding it is difficult to understand. It is certain that a very general opinion has been expressed in favour of opening Mountjoy-square and several of the residents have assented to the proposal to open it.

On August 14th a circular was issued by the Commissioners of the square to the owners and occupiers of houses there sufficiently long to fill a column in all the morning papers, and strong, as will be seen from the following excerpt:—

> The Commissioners cannot but think it an abuse of his position and an unwarrantable extension of his functions as executive sanitary officer for Sir Charles Cameron to canvass the residents of Mountjoy-square for their approval of opening Mountjoy-square without allowing them any opportunity of protesting against this proposal; and they cannot but feel that in many other particulars his circular is misleading and inaccurate.

The above seems more than sufficiently personal and strong. The following is a declaration of Parliamentary war:—

> As you are doubtless aware Mountjoy-square was enclosed under the authority of an Act of Parliament (42 Geo. III., chap. 34) under which the Commissioners are constituted at the expense of the inhabitants of the houses and proprietors of the grounds surrounding the square. If the Corporation now insist on opening Mountjoy-square in direct

opposition to the interest and the wishes of the inhabitants and owners it will be necessary for them to seek the authority of Parliament and to obtain the repeal of the existing Act, and should they attempt to do so the Commissioners will, if the residents and owners approve, take measures to oppose such proceedings.

Sir Charles Cameron seems to have been unfortunate in this attempt to provide an additional lung for congested Dublin and has apparently found a hornet's nest in Mountjoy-square. The whole square is small—only an acre in extent—but it really seems fully sufficient for an Irish battle-field in the holidays.

Increased Hospital Accommodation for Dublin.

A conference of municipal and Poor-law representatives was held on August 17th at the City Hall to consider the question of providing hospital accommodation in Dublin for cases of infectious disease. The Lord Mayor presided and the proceedings were private, but it is understood that a meeting was arranged to take place at a future date of the representatives of the different sanitary authorities of the city and county created by the new Act in order to fully consider the matter.

The Monaghan Water Scheme.

At a large and representative meeting of the inhabitants of Monaghan held on August 18th at the instance of the Urban Council it was decided to proceed with the water scheme which will consist of a reservoir capable of holding 10,000,000 gallons, or, in other words, a supply for 100 days. This will be situated some distance from the town of Monaghan and the outlet will be 130 feet above the highest point to be supplied, so that there will be ample pressure. The urban council will apply to the Local Government Board for a loan of £8000 to carry out this scheme.

New Medical School in Belfast.

A rumour is current that the Roman Catholics of Belfast intend to form a new medical school in connexion with their "Mater Infirmorum" Hospital which will shortly be completed. Application has been made to the Senate of the Royal University for recognition, and one of the officials of that institution has inspected the new buildings of the "Mater Infirmorum" Hospital, which when finished will form a distinct addition to the hospitals of the city.

August 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The International Hospital.

THE new International Hospital, 180, rue de Vaugirard, was opened on August 2nd in presence of an assemblage including Dr. Chassaing (a representative of Paris in the Chambre des Deputés) and several members of the municipal council. The hospital buildings were originally a large dwelling-house; all the latest structural arrangements necessary for hospital purposes have been introduced and there are several operation rooms complete in every respect. Dr. Bilhaut is the principal medical officer and there is a polyclinic (out-patient department) under the direction of Dr. Lacaze, Dr. Lenoir, Dr. Vasticar and Dr. Prebaut. Several speeches were delivered; Dr. Chassaing among others expressed the opinion that professors of the faculty might devote themselves more to teaching, to laboratory investigation, and to their hospital duties in place of giving most of their time to their private practice. Several newspapers in their reports of the proceedings at the opening ceremony allowed it to be supposed that the new International Hospital was a continuation of the institution founded under the same name by Dr. Péan some time back, and Madame Péan has written to those papers to correct this misapprehension. In consequence of reaching the age-limit Dr. Péan had to retire from his position as hospital surgeon and eight years ago he built at his own cost a fine hospital in the rue de la Santé. Being still in full vigour of mind and body he continued to operate there with his usual success and gave the place the name of the International Hospital. In order to reduce the heavy expense of maintaining it he sublet a part of the premises to an association of Paris medical men at a rental of 40,000 francs (£1600), and these gentlemen opened a polyclinic, but this arrangement was a source of dissatisfaction in two ways. Dr. Péan's surgical colleagues blamed him for giving an opportunity to surgeons who had no official position but who nevertheless boldly styled themselves "Chirurgien de l'Hôpital International," a designation which was misleading to the public from its similarity to the title of "Chirurgien des Hôpitaux de Paris," the latter title being a much coveted one, obtainable only by long and difficult competitions. The medical men of the Polyclinic for their part blamed Dr. Péan for charging them an exorbitant rental. The lease being for 15 years the work was carried on after a fashion, but Dr. Péan died last year and his heirs cancelled the lease of the Polyclinic, the medical staff of which accordingly had to leave. The hospital took the name of Hôpital Péan, and Dr. Delaunay, a former assistant to Dr. Péan, was appointed principal medical officer. The medical staff of the Polyclinic became separated. Dr. Aubeau founded a hospital of his own. Dr. Bilhaut and the gentlemen whose names have been already mentioned in connexion with his opened a new hospital which they called the International Hospital, the right to this appellation having been imprudently abandoned by Dr. Péan's heirs. Hence the letter written to the newspapers by Madame Péan, who did not wish that by giving the old name to the new hospital its medical staff should be able to pose as the scientific heirs and successors of her husband.

New Regulations for Medical Study.

New regulations for medical study, containing some important modifications of the system previously in force, have just been issued by the Minister of Public Instruction. For examinations which consist of two parts taken successively a student who has passed in the first but has been rejected in the second will not require to take up both subjects when he next presents himself for examination but will be credited with the subject in which he passed. The intervals which must elapse between rejection and re-examination are also altered. For the first rejection the interval is three months; each subsequent rejection increases the interval by an addition of three months. The long discarded custom of the examiners making use of the ballot has been revived. For examinations in a single subject two black balls result in the candidate's rejection; for examinations comprising several subjects one black ball in one of the subjects entails rejection in that particular subject and the candidate will present himself again in it at the end of six weeks. But what is far more serious for the medical profession, already so overcrowded in Paris, is that admission to it is rendered much more easy by the new regulations. For the future a degree in arts (*le baccalauréat de l'enseignement classique*) may be dispensed with, and in commencing the study for the certificate in physics and chemistry, which certificate is an essential preliminary to the medical curriculum, it will be sufficient to have a certificate of study in a Faculty of Sciences. This latter certificate is extremely easy to obtain, and, as Dr. De Maurans, the well-known editor of the *Semaine Médicale*, justly remarks in an admirable article in that paper, school teachers will be in a position to enter on medical study—a state of matters which points to a future overcrowding of the profession even greater than that which exists at the present day.

Precautions against the Transmission of Plague by Rats and Mice.

The Public Health Committee of France has just decided that precautions are to be taken against the transmission of plague by rats and mice coming from lazarets and shipping. In concert with the directors of the great ship-owning companies the committee has drawn up the following regulations which will be immediately carried into effect in all the ports in France. In the lazarets all openings are to be carefully closed or fenced with suitable protections such as metallic screens. The lazarets are to be provided with a sufficient supply of wire gauze and funnel-shaped guards for the moorings and ropes of vessels lying at the wharf. On board the vessels poison and traps will be laid down to destroy the rats and mice and their carcasses will be immediately burned. For their destruction in inaccessible places recourse will be had to sulphurous acid in the proportion of 40 grammes per cubic metre of air. Places where dead rats have been picked up will be washed with disinfecting solutions. The same precautions are applicable to vessels lying at a wharf. Before loading it is to be made certain that there are no rats on board, and equally before loading the vessel is to be disinfected

with sulphurous acid in all parts where rats might betake themselves; other parts of the vessel will be disinfected with solution of corrosive sublimate, 1 in 1000, to which two grammes of sea salt per litre (17 grains per pint) have been added. The mooring tackle and ropes holding the vessel to the wharf will be provided with guards, such as brushes or funnels, in order to prevent rats coming ashore by the ropes. Similar precautions will be taken while the vessel is at sea and poisonous pastes, preferably such as hinder the carcasses from putrefying (*mort aux rats*), will be placed in all parts of the vessel to which they may resort. On a vessel arriving at a lazaret the health officer will inquire whether any dead rats have been found on board and, if so, the carcasses will be given to him and will be immediately examined for the plague bacillus. If the bacillus is found the vessel will be entirely unloaded, the cargo, the passengers' luggage, and the effects of the crew will be disinfected, the whole vessel will be fumigated with sulphur, and the dead rats will be carefully burned. If the bacillus is not found the vessel may have pratique after the employment of the ordinary methods of disinfection. After the unloading of vessels at the port of arrival they will be disinfected with sulphurous acid wherever possible and other parts will be washed with disinfecting solutions.

August 22nd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

A New Form of Cell for the Furiously Insane.

ITALY, to her credit be it recorded, was among the first of the continental nations to adopt the wisely humane methods of the English Tuke in dealing with "mania furiosa." The late Pope Pius the Ninth was an ardent and effective advocate of these methods. Long before 1846, when he ascended the pontifical throne, he was, in the late "thirties," as Monsignor Mastai Ferretti, administrator not only of the great hospital of San Michele on the Ripa del Tevere, but of the Manicomio (madhouse) of the Santo Spirito, also on the Tiber. In this he found in use the coercive appliances common at that time to every European asylum for the insane—as, for instance, the shackles, whether of wood or leather or iron, and "the bath of surprise." These, thanks to his well-inspired *régime*, have long been banished not only from the Roman but from all Italian "manicomi"—the padded room or cell and the "camicia di forza" (strait waistcoat) being almost the only survivors of the "pre-Tukian era." Even the padded room has wellnigh had its day, not from any abstract objection to it but from certain "inconveniences" (to say the least) which have been hitherto inseparable from its construction. So grave have those "inconveniences" proved that the strait waistcoat alone or "altri legamenti speciali" (other bonds of a special kind) have in many cases been substituted for it in spite of the very serious harm resulting to the patient from mechanical coercion of any description. The padded cell, as hitherto known in Italy, is a more or less spacious room, its walls "imbottite" (stuffed) with hair, and covered with wax-cloth or soft leather. But the numerous "fossette" (depressed cavities) necessitated by the work of padding, while they offer the furious madman an easy "point d'appui" for scratching off or tearing down the structure, serve also as receptacles for sordes, more or less liquid, of a familiar kind—sordes not easily accessible to cleaning processes and by their accumulation or partially disturbed presence causing the structure itself to rot. In these circumstances, as I have said, a more frequent recourse has been had to the highly objectionable strait waistcoat, till in all asylums it would tend to become the only means of restraint, did not the eminent engineer Signor Bentivegna come forward with an ingenious rehabilitation of the padded cell or room. His design is this: the room is surrounded by elastic walls rising to a height of 2·20 metres from the floor and constructed of a metallic network (steel wires interlacing each other like those of the spring sofa or mattress), these elastic walls being fixed on wooden frames themselves riveted to the mason-work behind by elastic metal supports, while the inner aspect (with which the patient would come in contact) is faced with cloth of caoutchouc, smooth and impermeable. The flooring also is constructed on the same lines as the walls, but less elastic or more resisting, so as to render locomotion easier. Both structures (flooring and walls) are, according to Signor Bentivegna, not difficult to make and certainly are not expensive, the yielding metal supports between the mason-work and the elastic walls being fixed without trouble and the caoutchouc facing so welded under heat as to render the joinings of its several parts invisible. From the mason-work behind the elastic walls are 20 centimetres apart, so that these latter can be knocked against or pushed inward without touching the stone. Not a single "point d'appui" is thus offered to the furious inmate; his nails, however sharp, make no impression on the caoutchouc and scratching or tearing down of the same is thus rendered impossible. Its smoothness, moreover, obviates the accumulation of ordure or offensive liquid matter, accessible as it readily is to every process of washing or disinfection. The inmate, however violent, can be left without the surveillance necessary in padded rooms of the older type; while the admission of light, regulated from the outside, like the ventilation and the heating, is provided for by familiar arrangements—apertures or orifices through which water can readily be squirted or made to play on such parts of the wall as require cleaning from time to time. The design of Signor Bentivegna, which has met with the approval of several experienced alienists, will shortly be introduced, under their auspices, into more than one asylum in the Alta Italia, whence it may be adopted in others further south, to the suppression (partial if not entire) of the strait waistcoat and the humaner treatment of the unhappy victim to "mania furiosa."

"War to the Mosquitoes."

Under this title Dr. Edoardo Perroncito, Professor of Parasitology in the Subalpine University, criticises the recent work of Professor Celli and Professor Casagrande, "Sulle Sostanze Zanzaricide" (mosquito-killing substances), a work issued by the Società Italiana per gli Studi della Malaria. These investigators, experimenting on the ova of the culex pipiens, found that "to destroy them those substances did not always suffice which were destructive to the adult larvæ. They could, however, assert that the extremely young larvæ, especially if but recently born, have but a very small resisting power to the zanzaricide substances even highly diluted." Among the said substances possessing this destructive action they class two colours of aniline—to wit, the "Gallol" of the Weiler-ter-Meer House of Verdingen and the "Green Malachite" of the Aktiengesellschaft für Anilin-Fabrikation of Berlin. Of the two the Gallol is the more energetic. In very small doses it kills the larvæ of the mosquito in from six to 12 hours. From the practical point of view, however, Dr. Perroncito thinks that (the life conditions of these larvæ considered) the readiest means of destroying them and also the least costly as well as the handiest are petroleum and the other oils, mineral, vegetable, or animal, exercising as they do a mechanical action on ova and larvæ alike, and in the case of the latter occluding their "stomes" (*stomi*), as shown in the last century by Malpighi. A more pressing problem is, "How to kill adult mosquitoes infesting a house, and more particularly a bedroom, before exposing oneself to their sting?" Professor Perroncito cites the practice of his late distinguished colleague Dr. Ercolani who at Pisa (notorious for its mosquito swarms) used to go to bed under his muslin-safe ("zanzariere") and smoke a big cigar till sleep overtook him. Next day, says Dr. Perroncito, "the illustrious savant would have all the laugh on his side as he contemplated his colleague cruelly punctured in every feature by the 'seccantissimo insetto' (most annoying of insects)." Celli and Casagrande, indeed, justify Ercolani's tactics by showing that "tobacco smoke renders the mosquito impotent in less than a minute and kills it in from one to three minutes." Pursuing analogous experiments they demonstrate that the fumes from chrysanthemum powder annihilate the mosquito in five minutes and kill it in an hour, while the smoke from the fresh leaves of the eucalyptus paralyses it in from three to five minutes and destroys it in three hours. The odour of the essential oil of turpentine kills the mosquito in an hour, that of iodoform in 40 minutes, that of menthol in 45 minutes, and that of formaldehyde in from 10 to 15 minutes. Bisulphide of carbon Professor Perroncito has found most effective against the larvæ of the "gastrusequi" in the stomach of the horse, and "our vine-growers," he adds, "contique to hold it as the queen of insecticides." But all these fumes and vapours vitiate the air of the dormitory and half-asphyxiate the

sleeper till he has to rise and open the window—through which a fresh and hungry swarm of "zanzare" pour in. Let us look, then, he concludes, to the "vivai" (the breeding-grounds) of the "zanzare," whether infant or adult, and stamp them out then and there.

The Crusade against Tuberculosis; More "Princely Presents."

In THE LANCET of May 13th, p. 1333, I mentioned that the well-known Palermitan banker, the Commendatore Florio, had, in aid of Professor Cervello's treatment of tuberculosis by formaldehyde, founded an "Istituto Cervello" on the model of the Pasteur Institut at Paris at a cost of five million lire (£200,000). The same generous benefactor who presides at Palermo over the local "Lega contro la Tuberculosi" has just opened a public subscription for a popular sanatorium for tuberculous subjects—himself heading the list of contributions with 60,000 lire (£2400). The Cassa di Risparmio adds 25,000 lire (£1000) and eminent citizens are following up this initiative so handsomely that the building of the sanatorium will shortly commence.

August 21st.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Plague in Alexandria.

SINCE the plague was discovered three months ago there have been up to date only 83 cases. 67 of the patients in these cases were found in the town sick and were brought to hospital, two were moribund when discovered and were allowed to die undisturbed, and 14 were never seen during life but were diagnosed bacteriologically after death. These figures are important as showing that the bulk of the patients are discovered by the sanitary officials, contrary to experience in epidemics of cholera. The examination of all dead bodies is a very useful help, for it is certain that otherwise the corpses would have escaped recognition as those of plague patients and the houses and families would not have been treated. The total number of deaths from plague represents 45 per cent., but a study of the figures shows that the whole mortality for Alexandria is lower than that in preceding years. This proves that there cannot be many undetected deaths from plague. The disease is probably kept going by a few patients who have the malady mildly and who walk about and spread the disease unconsciously. This view is confirmed by the interesting case of a man in the Greek Hospital who has apparently recovered from an attack of pneumonic plague. His physical signs have disappeared, he looks well, and he vehemently protests against the injustice of being still detained in hospital. Yet his white, scanty, and innocent-looking expectoration contains plague bacilli which are virulent enough to kill a guinea-pig. This man is now in the sixth week of his disease and he would certainly not be isolated if it were not for the accusing microscope. Convalescents from cholera are kept in hospital until their fæces no longer contain bacilli; and a similar treatment would now appear to be necessary for those recovering from the pneumonic form of plague, but fortunately this is the rarer type, for most of the cases belong to the bubonic variety. There have been a few patients with axillary or cervical buboes, but most of them have had enlargement of the lymphatic glands of the groin. As might be expected it is chiefly the vertical femoral glands surrounding the saphenous opening which are attacked, because they receive the superficial lymphatics from the lower limb and suffer in the case of sores on the heel, &c. This makes it less difficult to distinguish plague buboes from venereal enlargements of the superficial inguinal glands in both sexes. As an exception I may mention that there have been two cases of inguinal buboes resulting from boils about the anus. The theory here would be that the individual had inoculated the boil by scratching it with a plague-infected finger. Many cases have had enlargement of one or more deep inguinal glands above Poupart's ligament, so that when they suppurated a careful dissection had to be made down to the artery on which they rested. The rule has been to operate late rather than early where possible, because of the risk to the community of letting out fresh cultures of bacilli in early cases. By delaying a day or two it is found that the bacilli are almost or entirely absent. Not one of the patients knew how he had received the primary infection and no scratch or wound could be discovered on the lower extremity in any case. None of the medical or nursing staff have contracted the disease, but the hospital post-mortem porter inoculated himself from a dead body which had not been opened. He cut his finger with a bandage while tying up the corpse and got an axillary bubo. But he is now back at his work and is as careless as ever. At first sight it is difficult to know why Frenchmen and Greeks dressed like ordinary Europeans should get the plague like barefooted Egyptians. But on cross-questioning the few European patients whom plague has picked out it is found that they either wear no shoes at their work or that they wear list slippers or leather boots with holes in them. Given an abrasion or a rubbed heel and the plague bacillus has an easy access. About one-third of the patients have been treated at the Greek Hospital, the others at the Egyptian Government Hospital. There have at no time been more than four fresh cases in any one day, and twice there has been a complete immunity from new cases for more than a week. The arrangements for dealing with suspected or certain cases is very complete and is the outcome of Sir John Rogers's well-known powers of organisation. Directly a case is reported in the town an ambulance waggon and disinfectors start for the spot from the hospital where everything is kept in readiness. A private carriage even is kept for those patients who prefer not to use the ambulance. The patient is at once removed to the infectious pavilion of the hospital, while his family is transported by omnibus to Gabarri, where they are kept, fed, and paid until it is certain that they have no second case among them. Over 600 of these suspects have been cared for, and so far there has been only one case of plague among them. Fortunately there has been no panic among the people and the Sanitary Department has been allowed a free hand as regards edicts and money. Isolation, disinfection, and general cleanliness have been the watchwords. Two English medical men and a lady practitioner who have had experience of the plague in India have been working in Alexandria as temporary assistants, and besides the regular sanitary staff there are about 800 extra employés. This number includes a good many sheikhs who as head men of the various districts of the town are paid eight francs for every case of plague which they find. 200 houses have been thoroughly disinfected and some 34,000 rooms whitewashed, while for a long time past every week about 1500 sacks of rubbish have been carted out of the insides of the houses and burnt. This is probably one of the most valuable of the measures which have been adopted and it is difficult to see what more could be done to try to stamp out the disease. Surgeon-Major Pinching has been working indefatigably on the spot and superintends everything himself.

Cairo, August 13th.

ABERDEEN AND THE ROYAL INSTITUTE OF PUBLIC HEALTH.—Intimation has been received in Aberdeen that the Royal Institute of Public Health has accepted the town council's invitation to the Institute to hold the annual meeting in 1900 in the "Granite City." Mr. Kenneth Cameron, chief sanitary inspector of Aberdeen, has been appointed a vice-president of one of the sections.

A DIFFICULTY UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.—At the meeting of the Newton Abbot Rural District Council held on August 17th the sanitary inspector reported a difficulty respecting a notified case of typhoid fever occurring in a boy at Chudleigh. The medical man who had reported the case stated that there were eight persons in a small room. The inspector added that he had disinfected the premises and with the medical officer of health had attended with a magistrate's order for the removal of the patient. The father of the lad had used bad language to them and had threatened them with personal violence. It appeared that another medical attendant had been called in by the family and he gave it as his opinion that the case was not one of typhoid fever. It was eventually decided by the rural council that a written apology should be demanded from the patient's father in reference to his conduct.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT PORTSMOUTH.

THE SECTIONS.

SURGERY.

FRIDAY, AUGUST 4TH.

Mr. H. RUNDLE (Southsea) read some

Notes on 375 Cases of Varicocele Treated by Operation.

The cases were those which presented themselves at the Royal Portsmouth Hospital in the years 1889 to 1898 and the chief purpose for which the operation was done was to enable young men to enter the navy or army. Varicocele was undoubtedly a very frequent cause of rejection; of the candidates for H.M.S. *St. Vincent*, the training ship for boys at Portsmouth, for the five years 1893–1897, 43 per cent. were rejected and 16 per cent. were rejected for varicocele. It was certain that too many men were rejected for that cause. Varicocele was a very common affection in boys and young adults. Dr. Clement Dukes, who had had so much experience of schoolboys at Rugby, said that 14 per cent. of boys between 13½ and 15 years of age had varicocele, but that only 1 per cent. of those so affected required operation, and this was in accordance with other observers who generally agreed that only a very small percentage of those suffering from varicocele required any operative treatment. There were two operations available—the subcutaneous and the open operation. Practically the open operation was the only one done now, for it was certainly the best. The incision should be made as high up as possible, for the higher it was the easier it was to keep the wound aseptic. It was of importance to tie together the two ligatures which had been put upon the veins, as by these means the testis was distinctly raised. A good inch of the veins should be excised. As a rule the patient left the hospital in two weeks. In two cases the ligature slipped; these were the only complications. He had never met with atrophy of the testis as a result of the operation. Lately he had been operating with the injection of a 5 per cent. solution of eucaine. To sum up, (*a*) varicocele existed in from 18 to 20 per cent. of young men without producing any physical discomfort; (*b*) it should not be considered a bar to admission to the services except in rare and pronounced cases; and (*c*) only a very small proportion of the cases required surgical treatment. In cases where an operation was required ligature and excision of a portion of the veins by an open incision was the best to adopt. It was a simple undertaking, free from danger, and the result was excellent.

Mr. R. H. LUCY (Plymouth) said that at the South Devon Hospital very many operations for varicocele were done and practically all the cases were operated on in order to enter the navy or army. Hardly any of the patients complained of any symptoms arising from the varicocele; they came only because they had been told to do so. He always performed the open operation and removed an inch of the vein. He was in the habit of sewing up the wound transversely and he thought that that helped in some degree to hold up the testicle. He had never met with a relapse.

Mr. JONATHAN HUTCHINSON, jun. (London), expressed his opinion that varicocele in some cases did real harm. In some severe cases atrophy of the testes occurred and in others there was very troublesome aching. It was sometimes advisable to excise a large piece of the lower end of the scrotum, with or without a separate incision.

Dr. T. A. BUCK (Ryde) had seen many cases rejected for the navy in which the varicocele was very slight indeed. He would like to ask if anyone present had ever seen complete disappearance of the testis after operation for varicocele. He had met with one case in which a man had been operated on in the usual way by the open operation and a few months later practically no trace of the testis on that side could be felt. He thought it better not to remove all the varicose veins but to leave a few of them.

Mr. RUNDLE, in reply, said that he had of course seen cases in which the varicocele was a real trouble, but these cases were quite exceptional and in the vast majority of the varicoceles operated on no operation was really required and it was only done to enable the young men to enter the services.

The CHAIRMAN (Colonel STEVENSON, R.A.M.C.) said that they had many cases at Netley and it was impossible to admit into the services men suffering from varicocele, not because varicocele would interfere in the great majority of cases with the efficient performance of their duty, but because the possession of a physical disability would make it possible for the man to plead illness when put on any work which he did not like.

Mr. L. A. BIDWELL (London) read a paper on

A Method of Attaching the Mucous Membrane to the Skin in the Perineal Excision of the Rectum.

He pointed out the great importance of attaching the mucous membrane to the skin after proctectomy; it greatly accelerated the healing, it diminished pain, and it prevented stricture. Usually, however, it was impossible without causing too much tension to bring down the mucous membrane. His method was as follows. After making the ordinary racket-shaped incision round the anus and excising the growth two transverse incisions two inches long were made on each side and about one inch apart. The two flaps of skin so marked out were dissected up and attached by sutures to the mucous membrane of the rectum. In one case of carcinoma of the rectum in which this method was tried four and a half inches of the bowel were removed and the wound healed rapidly almost by first intention.

Mr. R. H. LUCY demonstrated a

New Method of Fixing Patients for any Perineal Operation.

It was designed to do away with the crossbar of Clover's crutch; it consisted of a belt, as in Clover's apparatus, passing over one shoulder and through the other axilla; this was attached at each end to the outer side of a belt passing round the bent knee; the effect was to evert each thigh and to separate the knees. It acted very efficiently.

Dr. A. H. BAMPTON (Ilkley-in-Wharfedale) read the notes of

A Case in which a Bullet was Embedded in the Brain for Nine Months.

A boy was shot by his brother accidentally with a toy pistol loaded with a bulleted breach cap. The bullet entered the forehead; there was no loss of consciousness; the skull was trephined the same day and splinters of bone and some hair were removed. The bullet was not seen, the wound was closed, and it healed rapidly. The patient improved but complained of pain over the orbit; a skiagram was taken, but no trace of the bullet could be found and the use of the x rays increased the headache. It was soon noticed that any excess, especially of food, produced ptosis and headache; there was also slight drawing over of the head to the left side; when these attacks came on he was always compelled to go to bed. Eight months later, while away at Morecambe, he had a convulsion and was unconscious for some minutes. Later, when he had returned home, he had two or three more fits. Drowsiness came on about nine months after the accident; the pulse was slow and double optic neuritis was present; there was also some slight paresis of the face muscles. It was thought probable that an abscess was present. Mr. Victor Horsley operated and found the bullet at the farther end of an abscess cavity. After the operation a hernia cerebri formed and part of the protrusion was sliced off, and then a powder of boric acid and alum was dusted on; the hernia diminished in size and the wound healed about six months after the operation. Some months later a fit with unconsciousness occurred and three others have since developed and on each occasion it had been after over-work. The patient was now quite well.

Mr. THOMAS CARWARDINE (Bristol) contributed a paper

On Excision of the Rectum by a New Method and its Results.

In malignant disease of other parts of the body it was fully recognised that in order to obtain the best chance of non-recurrence of the disease it was necessary to remove the neighbouring lymphatic glands. Therefore, in excision of the rectum the sacral glands should be removed. Kraske's operation had a very serious rate of mortality. In Kraske's first 80 cases 15 died and even now Kraske had a death-rate of 10 per cent. and it was probable that Kraske's operation in the hands of most surgeons would have a mortality of about 20 per cent. Mr. Carwardine had employed his method

in two cases; the first was a spindle-celled sarcoma and inguinal colotomy was performed 10 days before the operation. The man now had no trouble with fæces or gas. In the second case there was no preliminary colotomy; all the presacral tissue was removed and part of the sphincter. In this case also the result was satisfactory. The method was as follows. A liquid diet was given for several days before the operation and a preliminary colotomy might be advisable in certain cases. The best position was Godlee's in which the patient lay on his abdomen with the pelvis high so that the intestines gravitated away from the seat of operation. Then a sub-periosteal excision of the coccyx and of the fourth and fifth pieces of the sacrum was performed. The rectum was then incised in the middle line posteriorly, the growth was isolated by incisions, and the presacral tissues were dissected up from the sacrum and removed with the growth, and the mucous membrane above was stitched to the mucous membrane below. The stitches were removed on the ninth day.

Mr. CHARLES RYALL (London) read the notes of

A Case of Extensive Trans-sacral Excision of the Rectum

followed by perfect control of the sphincter. The patient was a woman, 40 years of age; she had a discharge of blood and mucus for three years. The operation was performed in June, 1898; the pouch of Douglas was opened and it was then found that the disease extended far up. Part of the sigmoid flexure was freed so that it could be brought down and 12 inches of the bowel were drawn out. The remainder of the operation was postponed on account of the great collapse from which the patient suffered and four pints of normal saline solution were injected. One week later the loop was excised and a sacral pad was worn to control the sacral opening of the bowel. Subsequently the two openings were made into one and that was closed later still. By Dec. 24th the patient had recovered completely and the motions were quite natural.

Mr. C. MORTON (Clifton) considered that the outlook of Kraske's operation was brighter than Mr. Carwardine had made out. He asked in what way the operation Mr. Carwardine had described differed from Kraske's. He thought that it was absolutely necessary to open the peritoneum in many cases.

Mr. ROGER WILLIAMS (Bristol) looked upon Mr. Carwardine's operation as a modification of Kraske's and thought that it was more suited to growths of the lower half of the rectum.

Mr. RYALL thought it very desirable to open the peritoneum early, so that the bowel might be brought down and tension prevented.

Mr. CARWARDINE, in reply, stated that his remarks on the results of Kraske's operation were founded on Kraske's own statements. The essential point of his own method was that by it he was able to clear away all the presacral lymphatic glands.

Mr. JAMES BERRY (London) read a paper on

72 Consecutive Cases of Goitre Treated by Operation (Extirpation or Enucleation).

He first explained that by "extirpation" he meant the complete removal of one lobe of the gland with its capsule and that "enucleation" was the removal from inside the thyroid gland of an adenoma. In 33 cases extirpation had been performed and in 39 enucleation. Enucleation was not possible in many cases and was only suitable for encapsuled tumours. Many cases of goitre were curable by medical treatment and even when this was not the case it was not always advisable to operate. Of the 72 cases 54 were operated on for dyspnœa, nine for displacement of the trachea, five chiefly for the deformity, three for suspicion of malignancy, and one for prolonged suppuration from a sinus. Dysphagia was very rarely a prominent symptom in cases of non-malignant goitre. It was very rarely justifiable to operate merely for the deformity. The most important symptom for which an enlarged thyroid should be excised was dyspnœa, and that symptom occurred in two classes of cases. Firstly, in rapidly growing parenchymatous goitres, and for this extirpation was required; and secondly, for goitres in which the enlargement was low down behind the sternum; in these an operation was often urgently needed and it should not be long delayed. As to the anæsthetic employed, if there were no dyspnœa he could see no reason against a general anæsthetic, but if dyspnœa were present it was much better not to employ a general anæsthetic. In 10 of the cases a local anæsthetic had been employed and he had been much pleased with that method, for the patient was able to draw the surgeon's attention when the trachea was pulled on and dyspnœa resulted, and the absence of subsequent retching lessened the risk of hæmorrhage. The best skin incision Mr. Berry considered to be the single oblique incision, but in the young the scar tended to contract and cause some unsightliness. The scar from the transverse incision was certainly less noticeable, but the operation was more difficult. It was better to suture the divided infrahyoid muscles, but they should be divided not immediately under the skin incision, otherwise the scar might become adherent. With regard to the results of the 72 cases, three died—one from chloroform and the two others from recurrent hæmorrhage. In the last 39 cases no death had occurred. In 56 of the cases healing had occurred by first intention and this was especially frequent since he had adopted the dry aseptic method of operating. In more than half the cases the temperature never rose above 100°. He had in no case met with any remote complications.

Dr. A. W. SHEEN (Cardiff) described

A Case of Secondary Thyroid Growth.

The patient was a woman, 58 years old; several of her relatives had had goitre and she herself had had an enlarged thyroid for 38 years. In the last four years she had had a tumour in the left occipital region. This had attained a large size, it pulsated, and she complained of a constant murmur in her left ear. On June 13th, 1898, the left external carotid was tied and two days later the tumour was softer and smaller. On Sept. 15th the tumour was exposed by the raising of a flap and it was found to emerge from the bone, so nothing further was done. Nine months later the tumour had not altered; it still pulsated and the bony margin was more distinct. This was doubtless one of those very rare pulsating secondary thyroid tumours.

Mr. BIDWELL said he had often seen many small adenomata in parenchymatous goitre. The worry which many patients experienced from an enlarged thyroid was often sufficient to justify removal, even though no urgent symptoms were present. He knew of a case in which a patient who had had a local anæsthetic in an operation for a goitre preferred a general anæsthetic for a second operation; this was hardly in favour of local anæsthesia. The Y-shaped incision was often useful, but the transverse incision was the best.

Mr. D'ARCY POWER (London) asked if the division of the infrahyoid muscles ever caused any dyspnœa, such as was common after division of the suprahyoid muscles.

Mr. BERRY, in reply, agreed with Mr. Bidwell that adenomata were common in parenchymatous goitres. Enucleation was justifiable for mere deformity but extirpation was not. He had never met with any dyspnœa as a result of division of the infrahyoid muscles.

Mr. CHARLES A. MORTON (Clifton) read the notes of

A Successful Case of Resection of Three-Quarters of the Stomach for Malignant Disease.

The patient was a man, aged 39 years, who complained that for eight months he had had pain in the epigastrium and in the back after meals. He had vomited only occasionally. He was extremely emaciated, but he was able to take a little fish. On the left side of the abdomen above the umbilicus was a large, hard, irregular mass; it varied in position and no certain diagnosis was formed. An incision four inches in length was made through the abdominal wall and the growth was found to involve the greater part of the stomach and only the cardiac end was free. There were no enlarged glands or secondary growths. The great omentum was ligatured and the stomach was turned upwards; then the gastro-hepatic omentum was tied and divided. The stomach was then opened and a sponge was placed in the œsophagus; the growth was then removed with the greater part of the stomach and the ends were closed by Lembert's suture. The duodenum was then united by a fresh opening to the stomach by means of a Murphy's button. Drainage-tubes were left in temporarily. The patient recovered completely, but the button had not been noticed to pass. The growth was apparently a sarcoma.

Mr. MOYNIHAN (Leeds) had performed laparotomy on 19 cases of malignant disease of the stomach, but in not one of

them were the conditions suitable for pylorectomy. It was extremely difficult to diagnose carcinoma of the stomach sufficiently early to justify operation. Possibly the fact that the growth was a sarcoma in Mr. Morton's case might explain the satisfactory result.

Mr. W. G. SPENCER (London) could not agree that malignant disease of the stomach was unsuited for operation. In many cases there could be no doubt that pylorectomy did a great deal of good and it was no valid objection to the operation to say that recurrence did occur in most cases after an interval of relief.

Mr. ROGER WILLIAMS was inclined to think from the specimen that the growth was a diffuse carcinoma.

Mr. L. A. BIDWELL had until recently considered pylorectomy almost unjustifiable, but he had had four cases this year in which pylorectomy was easy to perform and promised well.

Mr. MORTON, in reply, claimed that in suitable cases the operation was advisable.

Mr. W. G. SPENCER described

Two Fatal Cases of Venereal Phagedæna.

The first case was a man, 61 years of age, who had no signs of excess of alcohol or syphilis. He had a spreading gangrene of the penis, pubes, scrotum, and the skin round the anus which commenced soon after infection. The fœtor was intense. The sloughs were cut away, incisions were made, and pure carbolic acid was applied; for about a week he improved, but later he developed broncho-pneumonia and he died a little more than two weeks from the date of inoculation. The second patient was a woman, aged 35 years, who a fortnight before admission had had shivers and painful micturition and some vomiting after food. She had a blood-stained uterine discharge and double pyosalpinx was diagnosed. While the dilated tubes were being removed one ruptured. For five days after the operation the patient improved, then the abdominal wound gaped, and it was found that the skin was extensively undermined by phagedænic sloughs. A foul discharge welled up from the pelvis and the patient died 15 days after the operation. Infection had occurred four weeks before the shivering attack. At the post-mortem examination the small intestine was found to be perforated. Several observers had described micro-organisms in connexion with noma and other forms of phagedæna, but the several accounts were hardly in accordance.

Mr. ROGER WILLIAMS read a paper on

The Surgical Treatment of Uterine Cancer

in which he first pointed out that the operations practised for malignant disease of the uterus had steadily increased in thoroughness. There were five requisites for the operative treatment of this condition: (1) the whole uterus must be removed; (2) the upper part of the vaginal wall must be taken away; (3) as the disease tended to extend to the broad ligaments, the Fallopian tubes, and ovaries, these should be removed also; (4) the pelvic and lumbar lymphatic glands should be examined and if necessary they should be removed; and (5) the operation must be performed at an early stage of the disease. The abdominal operation was the only one possible under the circumstances. The mortality might be taken to be under 14 per cent.

Dr. G. E. ARMSTRONG (Montreal) contributed a paper on

The Surgical Treatment of Hæmorrhage from a Gastric Ulcer.

Judging from the post-mortem examination statistics of the Montreal General Hospital the mortality from hæmatemesis in simple gastric ulcer was 3 per cent. It was generally said that those cases of gastric ulcer were best suited for surgical treatment in which small and long-continued hæmorrhages occurred, but the large profuse hæmorrhages were equally amenable to surgical treatment. He had operated in two cases of profuse hæmorrhage and the first recovered. In all cases of simple gastric ulcer the hæmorrhage was arterial in origin and needed surgical treatment.

Mr. W. G. SPENCER mentioned that within the last year he had operated on two cases of hæmorrhage from gastric ulcer and in both cases recovery followed.

Mr. JONATHAN HUTCHINSON, jun., read a paper on

The Vermiform Appendix in Relation to Hernia and Intestinal Obstruction.

He pointed out the frequency with which suppuration occurred in an appendix when lying in a hernial sac and this was often mistaken for strangulation. Not rarely the inflammation of the appendix preceded the appearance of a hernia. Mr. Hutchinson was inclined to think that the inflammation was a cause of the appendix becoming herniated. In a certain proportion of cases peritoneal bands were found passing from the cæcum to the testis, but there was probably very little real connexion between the two, and this band could not be credited with drawing the appendix into a hernia. The appendix varied greatly in length; in some cases it had been found to be eight or nine inches long. Occasionally the cæcum "wandered" and was found on the left side of the abdomen and so the appendix might appear in a left inguinal hernia.

65 members, including three ladies, attended the meeting of this section.

OBSTETRICS AND GYNÆCOLOGY.

FRIDAY, AUGUST 4TH.

Dr. MACPHERSON LAWRIE (Weymouth) read

Notes of 50 Consecutive Cases of Cœliotomy for Diseases of the Uterus and Appendages with 48 Recoveries

performed during the last 20 months, with observations. The cases were classified as follows: ovariotomies, eight cases with no deaths; salpingo-oöphorectomies, 28 cases with no deaths; abdominal hysterectomies, four cases with one death; vaginal hysterectomies, eight cases with one death; secondary operations for complications, two cases with no deaths; total, 50 cases with two deaths. In dealing with broad ligament cysts Dr. Lawrie advocated enucleation of the cyst, followed by the securing of the base of the broad ligament with a chain of sutures and the bringing together of the edges of the peritoneal flaps. The latter step obviated the risk of formation of adhesions and rendered drainage less necessary. He attributed the absence of mortality in a series of cases presenting serious complications to the beneficent effects of modern antiseptics and asepsis. In speaking of the second group of cases he said that the question of justifiability naturally arose when abdominal section was undertaken for the relief of a condition which did not threaten life and he seldom operated in these cases unless the conditions had been for a long time in existence and palliative treatment had been thoroughly tried. With these provisoes against hasty operating he believed that patients were entitled to relief if this could be obtained with comparative safety. One of his cases illustrated the not infrequent association of appendicitis with inflammatory disease of the right appendages. He believed that when salpingitis was non-suppurative it was right to leave one ovary and tube if they appeared to be unaffected, but when pus was found in one tube the other should always be removed. In three out of his four cases of abdominal hysterectomy for fibro-myoma other pathological conditions were associated with the disease—in one case an ovarian tumour, in another diseased appendages, and in a third pyosalpinx. All these three were examples of the subperitoneal method and all made an uninterrupted recovery. In the fourth case the patient died on the third day from shock after an operation by the combined vagino-abdominal method. In speaking of vaginal hysterectomy for cancer he said that the question often arose how far the mobility of a cancerous uterus might be impaired by adhesions without precluding operative interference. His cases well illustrated this point and showed that firm adhesions were no bar to the performance of a successful operation. In three cases the operation was done for small fibroids and there was no doubt that the vaginal route, when practicable, presented many advantages, for there were less shock, a quicker convalescence, and no risk of subsequent ventral hernia. In one instance this operation was performed for prolapse. In conclusion, Dr. Lawrie said that he believed that the principal factors in obtaining good results in abdominal surgery were, firstly, asepsis and, secondly, careful hæmostasis, and as points of lesser importance reasonable speed in operating, avoidance of unnecessary intra-peritoneal manipulations, and careful after-treatment.

Dr. WARDEN (Paris) thanked Dr. Lawrie for his interesting paper and referred to the value of vaginal section in cases of diseased appendages. He also referred to Doyen's method of ligature of the broad ligament by means of his specially powerful clamp forceps, by means of which a thick structure like the broad ligament could be reduced to the thickness of a sheet of paper, thus reducing the risk of secondary hæmorrhage to a vanishing point.

Dr. WALTER TATE (London) congratulated Dr. Lawrie upon his excellent results and agreed with him as to the desirability of operating in cases of salpingitis where the patient was a constant sufferer and unable to perform her household duties. Moreover, the amount of disease present was usually found at the operation to be greater than had been anticipated from bimanual examination. With regard to methods he would restrict the vagino-abdominal method to cases of malignant disease of the uterine body in which the uterus was too large to be removed per vaginam and to cases of submucous fibroids which could not be dealt with by enucleation, but were too large for removal by the vaginal route. He thought that great care ought to be exercised in operating for cancer of the uterus when there was impairment of mobility. As Dr. Martin of Berlin had said, "where vaginal hysterectomy for cancer is an easy operation it is a good operation; where it is a difficult operation it is a bad one."

Mr. J. W. TAYLOR (Birmingham) advocated the combined operation in certain cases of hysterectomy for myoma when the operation could be carefully planned beforehand and performed aseptically throughout. The amount of intra-peritoneal manipulation was materially shortened by this method and the operation was rendered easier. He also advocated vaginal section for many diseases of the appendages which had hitherto been usually treated by abdominal section, and further insisted on the importance of the investigation recently reported by him to the British Gynæcological Society which appeared to show that gonorrhœal salpingitis was largely under the control of mercury and iodides when persistently administered.

Dr. MORE MADDEN (Dublin) read a paper entitled

The Modern Methods of Treatment of Uterine Cancer.

He said that the increasing frequency of uterine cancer was evinced by the fact that within the last few years the proportion of this disease had risen to 3 per cent. of all the cases under observation in the gynæcological wards of the Mater Misericordiæ Hospital, Dublin. The methods of operation he divided into two groups—viz., curative and palliative. Amongst the former he referred to (*a*) early amputation of the cancerous cervix; (*b*) hysterectomy by vaginal or abdominal routes; (*c*) electrolysis; (*d*) other escharotics active or potential; and (*e*) injections of absolute alcohol into the substance of the growth. Of these curative measures he placed his chief reliance on the first—i.e., the early removal of the cancerous cervix. In the vast majority of cases the disease first manifested itself in the cicatricial tissue, resulting from parturient laceration of the cervix. In order to recognise the disease in time he thought it advisable to resort to microscopic examination of the scrapings of the diseased surface in all cervical lesions occurring in patients approaching or beyond the climacteric period. When thus detected early cervical cancer could, in a large proportion of cases, be effectually arrested by the timely and complete removal of the cervix above the line of infection. In two-thirds of his cases patients had shown immunity from recurrence for periods varying from two to 10 years. He thought that hysterectomy should be restricted to those less frequent cases in which cancer primarily attacked the body or fundus of the uterus. Under these conditions hysterectomy by abdominal section afforded greater facilities for the extirpation of implicated lymphatics than the vaginal procedure. Although the immediate mortality of hysterectomy had been recently reduced to an extremely small percentage the intimate lymphatic connexions of the uterus must militate against the probability of removing all the widely scattered lymphatic foci by means of the surgeon's knife. In no disease could the necessity for prompt intervention be more necessary than in this. As a preventive measure he advocated the removal of all cicatricial tissue resulting from parturient injuries when they came under the observation of the gynæcologist in women who had passed the menopause. Lastly, Dr. More Madden discussed the palliative measures to be adopted in inoperable cases for the relief of pain, the arrest of hæmorrhage, and the deodorisation of discharges.

Dr. ARCHDALL REID (Southsea) followed with a paper upon

The Causes which Render Difficult the Labour of Civilised Women.

He first referred to the address of Dr. W. J. Sinclair to the Section of Obstetrics and Gynæcology at the Montreal meeting of the Association in 1897, and remarked that his conclusion that forceps were used much more frequently by the present generation of men than the past was well founded. He believed, however, that the change was due in part at least to necessity, that, in fact, it was due to a gradually increasing disproportion between the fœtal head and the maternal pelvis. Dr. Sinclair had felt justified in coming to the conclusion that modern midwifery was much too meddlesome, and to meddlesome midwifery he attributed the majority of the injuries which women received during labour. His (Dr. Reid's) own experience led him to very different conclusions. He had seen in his own practice and in that of his friends during the last 10 years about 1000 labours and in all these cases there were only three deaths. In about 20 per cent. of these cases forceps had been used, and in no single instance had he heard of the patient seeking the aid of a gynæcologist to repair the injuries inflicted by this instrument. Unless an obstetrician meddled he did not quite see what use his presence was at a labour. His belief was that the labours of civilised women were so severe that in the absence of skilled aid a very considerable proportion would perish, and even in cases where surgical aid was unnecessary delivery approached in severity a major operation, the effects of which the woman felt for a fortnight or a month. The labours of savage women were known to be safe and easy and the question arose, How did civilisation render labour difficult? After discussing the views of Sir James Simpson and others Dr. Reid stated his own view which was as follows. Women with small pelves tended to have daughters with a like peculiarity and people who at birth had large or small heads tended to transmit that peculiarity. When a savage woman had a small pelvis or a large-headed child she generally died in labour; the race was thus purged generation after generation of all narrow hips and large heads while the right proportion between head and pelvis was secured. In the highest civilisation many small-hipped women and large-headed children were annually preserved. If these perished the average difficulty of labour in the next generation would be appreciably ameliorated. Here was the reason why the labours of civilised women were becoming increasingly difficult and he thought it not improbable that about the end of the twentieth century another gynæcologist, following Dr. Sinclair, would arise and point out that while their grandsires only used forceps in about 75 per cent. of cases degenerate contemporaries used them in 99 per cent. Injuries would then be very numerous and gynæcologists very busy.

Dr. PURSLOW (Birmingham) thought that the difficulty of labour in civilised women was often due to deficient power of the expulsive muscles, the result of want of exercise and of the use of corsets. He also thought that posture had something to do with it, as savage women invariably assumed the squatting position.

Dr. SHAW-MACKENZIE (London) read a paper entitled

The Syphilitic Factor in the Diseases of Women.

He remarked that the presence of pelvic inflammatory disease in parous women was often associated with minor syphilitic sequelæ. These lesions were often attributed to gonorrhœal infection or to sepsis, but this explanation was inadequate. Syphilis both in its primary and consecutive manifestations might be modified from various causes; the primary lesions might be of a suppurative character so slight as to escape attention and the same was true of the secondary lesions. When the primary sore was situated upon the skin it was indurated; when situated upon mucous membrane it was not. Many facts might be cited in favour of the view that blenorrhagia with erosions was of a syphilitic nature. For example, it was not uncommon for obvious syphilitic sequelæ to be noticed in both sexes in whom there was no history beyond a previous and sometimes forgotten soft sore, erosion, or gonorrhœa. Further, latent syphilis might become active in pregnancy or manifest after delivery and in syphilis acquired in early pregnancy the primary lesion was usually a severe one. He

felt compelled also to admit the natural association or predisposition in syphilis to secondary pyococcal invasion or the conversion of non-pathogenic into pathogenic germs in the parturient canal under the stimulus, either local or general, of the syphilitic virus. He accordingly believed that vaginitis, endometritis, salpingitis, ovaritis, and pelvic peritonitis might be amongst the secondary, consecutive, or inherited symptoms of syphilis or due to pyogenic invasion secondary to the same.

Dr. WARDEN (Paris) read a paper upon

The Treatment of Puerperal Infection as carried on in the Hospitals of Paris.

He said that when they recalled the pathology of puerperal infection, now universally admitted to be due to the invasion by pyogenic microbes of the mucous membrane and muscular wall of the uterus, it was natural that they should incline to early and energetic local treatment. The points upon which he wished to lay stress were prompt recognition of the infected state and immediate local treatment. In all such cases he thought that a routine treatment was highly advisable, and to take refuge in the old adage of "treating each case upon its merits" seemed to him to be but "darkening counsel." A few years ago they were inclined to look upon a slight rise of temperature on the third or fourth day as more or less a matter of course and to treat it with a dose of castor oil. It was against this pernicious expectant treatment that he wished to protest, for by it time was lost which might mean life. They should put before them the ideal of a puerperium with a perfectly normal temperature and should regard a rise of temperature to 100° F. on the second or third day with grave suspicion, and unless its cause were obviously situated elsewhere should at once administer an abundant intra-uterine douche. That this ideal was practicable had been abundantly proved by the records of many maternity hospitals at home and abroad. They must in the first place recognise the conditions favouring infection, such as (1) absence of antiseptic care before the confinement; (2) early rupture of the membranes with exposure of the ovum; (3) hæmorrhage; (4) protracted labour; (5) any intra-uterine manipulation or instrumentation; (6) cases of dead fœtus; (7) retention of membranes; and (8) abortion. When the temperature rose on the second or third day an intra-uterine douche should be given at once; if the temperature then fell to normal that would suffice; if at the end of the third day it remained above 100° and the pulse was from 100 to 120 the uterus should be thoroughly curetted with a blunt curette. On the second day continuous intra-uterine irrigation during 24 hours if necessary with a weak antiseptic or with sterile water should be practised. Out of 123 infected women thus treated in the Clinique Baudelocque 85 were cured by the intra-uterine injections, only 38 requiring to be curetted. Professor Pinard believed that curetting on the second day was dangerous from the risk of air entering the veins, while on the fifth or sixth day it was already too late; therefore the most propitious moment was on the second elevation of temperature, the first having yielded to the intra-uterine douche. After curetting, the uterus should be packed with gauze which could be removed 24 hours later, and a final douche should then be given. Out of the 38 cases thus treated the temperature fell at once in 12 to normal. If the temperature did not fall at once to normal it might do so gradually during a week or so, in which case an intra-uterine douche should be given daily, one curettage sufficing. In 11 of the 38 cases the temperature subsided thus, the operation being therefore successful in 23 of the 38 cases. After one thorough curettage more reliance should be placed upon continuous intra-uterine irrigation than upon further use of the curette. Only four of the 38 patients referred to died. In the last resort they could only depend upon stimulants, tonics, oxygen, salt solution, &c. In grave cases he would not hesitate to practise an abundant venesection followed by a large intravenous or intra-cellular injection of saline solution. He regretted that he was unable to bring forward details of the treatment of puerperal infection by anti-streptococcic serum in Paris, but he could say that the conclusion reached by Parisian accoucheurs was that up to the present results did not justify the recognition of the serum as a specific for puerperal infection.

Dr. WALTER TATE drew attention to the fact that in the London schools digital exploration of the uterus was considered a better method of treatment in cases of fever following delivery than intra-uterine douching. He would like to ask Dr. Warden whether exploration of the uterus was practised in all cases where intra-uterine douching failed to bring down the temperature, or was it confined to cases where there was an offensive discharge or other conditions suggesting local mischief inside the uterus?

Mr. CHILDE (Southsea) thought that in cases of slight fever following delivery it was not justifiable to resort to intra-uterine interference in the absence of any local symptoms whatever. A large number of such cases were not due to septic infection at all, nor was it justifiable to assume that they were and to act upon that assumption.

The proceedings of the section then closed with a vote of thanks to the President, moved by Dr. PURSLOW and seconded by Dr. SHAW-MACKENZIE.

PSYCHOLOGY.

FRIDAY, AUGUST 4TH.

Dr. G. E. SHUTTLEWORTH (Richmond, Surrey) opened a discussion on

The Treatment of Epileptics and Imbeciles

and pleaded for a more systematic provision on the part of Poor-law authorities for these classes. For the sane epileptic the law made no provision in this country and the insane epileptic was provided for only because he was a lunatic. It would be well for the country to consider the examples of America, Germany, and other countries where by timely care of the sane epileptic he was often prevented from passing into the category of the insane. The Craig Colony, New York, was the most notable of the American institutions for sane epileptics. It contained at the date of its last report 322 patients and contemplated providing ultimately for 600. The system of housing was that of detached cottages (each cottage containing from 50 to 75 beds) spread over large cultivated grounds and under medical direction. The huge colony at Bielefeld which now contained 3000 epileptics was the pioneer institution in Germany and other institutions have since been established at Alt Scherbitz, Wühlgarten, and elsewhere. The London County Council had decided to build on a portion of their estate at Hoxton Manor detached buildings to accommodate 300 male epileptics distributed in eight or nine cottages over the 127 acres of ground on which they were to be employed—an interesting experiment which would doubtless be a precedent for other counties. The methods of treatment (including open-air work, regulation of diet, &c.) had done much good in ameliorating fits and in improving patients generally at these institutions and at the colony of Chalfont (according to Mr. Penn Gaskell) only one colonist had had to be removed on the ground of insanity during the five years of the existence of that institution. At Maghull and at the Meath home also only one patient at each place had to be discharged owing to insanity supervening. Not only were epileptics able to find the most suitable surroundings for improvement and usefulness in such institutions but they were removed from the temptations of drink and sexual vice and saved from becoming insane. As regarded the cost of maintenance and treatment it appeared from the experience of various colonies not to exceed from £35 to £50 per head per annum, and Dr. Spratling of Craig Colony contended that in a large institution it would be about £20 per head. The provision for imbeciles was briefly referred to. In the metropolitan district there were three special institutions for imbeciles with a total of 6000 beds. Outside the metropolitan area, however, special accommodation in the aggregate was insufficiently provided.

Dr. TELFORD-SMITH (Lancaster) (whose contribution to the discussion was read in his absence) considered that persons who were the subjects of mild epilepsy and whose intellect was normal should attend ordinary schools, while persons suffering from epilepsy with idiocy and imbecility should be placed in custodial institutions (asylums). Patients the subjects of epileptic insanity in the restricted sense could find suitable care and treatment in ordinary asylums. There would still remain cases of epilepsy with feeble-mindedness, and these patients required special schools. Finally, for severe cases of epilepsy, not insane or imbecile, experience was strongly in favour of the industrial colony system, located in the open country, conducted on methods now well known, manual training and farming being the chief things taught, so that the patients were able to lead useful and relatively self-supporting lives.

Dr. FLETCHER BEACH (London) referred to the treatment of sane epileptics, which varied according as they were treated at a hospital or in private practice or at a colony. He specially advocated the use of the bromides of ammonium and strontium in the treatment of epileptics, as these drugs were less depressing than the bromide of potassium. When large doses were given he coupled strychnine with the bromides to counteract the depressing effects of the latter. He favoured a diet from which meat and eggs were excluded for a time. The combined dietetic and drug treatment gave, in his experience at the Chalfont Colony for Epileptics, the most gratifying results. He also pointed out that in the treatment of imbeciles great attention should be paid to the hygienic conditions under which they lived and emphasised the fact that a good physical foundation must be laid before attempting to improve their minds.

Dr. LLOYD ANDRIEZEN (London) referred to the sociological and hygienic sides of the problem and to the needs of special legislation. In treatment he found the addition of compound syrup of the hypophosphites to the bromides of sodium and ammonium of distinct value in averting or diminishing dulness, muscular depression, and feebleness of circulation, and gave his experiences with antipyrin and ammonium bromide and with lavage and gastro-intestinal asepsis in suitable cases.

Dr. DICKINSON BERRY (London) referred to the need of some provision for epileptic children attending the Board schools.

Mr. BRISCOE (Alton) dealt with the subject of convulsive seizures, pointing out the pathological conditions associated with the attacks and showing the valuable results of venesection in serious cases.

Dr. ALEXANDER HAIG (London) dealt with the relation of diet to epilepsy and pointed out that uric acid increased blood pressure, caused headache, and increased the liability to epileptic fits. He recommended a scale of diet—rice, vegetables, milk and cheese, macaroni, and other farinaceous preparations, and in special cases "protene" and "gluten"—this was calculated to subserve all the needs of food and digestion, but was quite free from uric acid, and was found by him to give good results and to avert the disagreeable and dangerous symptoms above alluded to.

Further papers were contributed by Dr. LLOYD ANDRIEZEN on the Bearings of Pathological Discoveries on the Treatment of Mental Diseases; by Dr. T. B. HYSLOP (London) on Double Consciousness; by Dr. HARRY CAMPBELL (London) on Morbid Self-assurance; by Dr. R. MACPHAIL (Derby) on Post-operative Insanity; and by Dr. J. MILNE BRAMWELL (London) on the Post-Hypnotic Appreciation of Time.

A Correction.

Dr. P. W. MACDONALD writes to us as follows: "On page 529 of your last issue you insert a two-line notice of our paper at the Portsmouth meeting of the British Medical Association in the following words: 'Dr. P. W. Macdonald and Dr. A. Davidson pointed out facts and instances showing that congenital general paralysis was frequently associated with hereditary syphilis and was the probable outcome of that disease in a neuropathic condition.' I wish to state for your information that this is an absolute misrepresentation of our paper. Our facts showed exactly the opposite and five out of the six subsequent speakers supported us." We can only express our regret that the error should have occurred. Our reporter in transcribing his report omitted the line after the word "showing," which ran thus, "that the clinical histories and antecedents of three patients negatived the view——."

PATHOLOGY.

FRIDAY, AUGUST 4TH.

Exhibition of Specimens.

Dr. W. S. LAZARUS-BARLOW (London) showed the following specimens: 1. A Dissecting Aneurysm of the Heart. This was obtained from a patient who died from malignant disease and in whom no cardiac lesion was suspected during life. In the wall of the right ventricle about the apex was a hæmatoma, the gross limits of which were one and a half inches by one inch; nevertheless, in the form of extravasation it extended much beyond the limits given. At the lower part of the hæmatoma was a small rupture and opposite to it on the inner wall of the hæmatoma an opening which communicated with the cavity of the right ventricle. At the necropsy the pericardium was found to be distended with blood-clot. The myocardium was intensely fatty, the coronary arteries were highly atheromatous and calcareous, and the left artery was obstructed by thrombus. To the best of Dr. Lazarus-Barlow's belief a similar specimen had not previously been recorded. 2. Gummata of the Heart-wall. This was a specimen obtained from the body of a man, aged about 40 years, who fell down dead. The heart weighed 17 ounces. In the substance of the left ventricle immediately beneath the pericardium, which was locally congested, were three or four white masses of about the size of hazel nuts. Microscopically these consisted of numerous small round cells compressing and replacing the myocardium. Small fragments of muscle lay here and there amongst the cells. Giant cells were fairly numerous and there was also present a certain amount of young fibrous tissue. The white masses were nowhere caseous and they shaded gradually off into the more normal myocardium. The right ventricle was differently affected. It bore only one mass similar to those in the left ventricle, but it was the seat of very extensive and early fibroid change which affected chiefly the columnæ carneæ. Microscopically the change on this side of the heart was more advanced than on the other, there being far more fibrous tissue and far fewer cells present. The condition on this side was therefore an early fibrosis. The small arteries were perfectly normal on both sides of the heart, but there was extreme atheroma of both aorta and pulmonary artery. Dr. Lazarus-Barlow adverted to the rarity of gumma of the heart; out of 11,000 necropsies at St. George's Hospital he had only found eight cases. With regard to the question of syphilis there was a depressed scar in the liver in the present case; but, as in cases of fibroid degeneration of the heart, collateral evidence of syphilis was in cases of gumma of the heart extremely scanty. In four out of the eight cases at St. George's Hospital it was expressly noted that no other evidences of syphilis were found. Considering the different conditions that were microscopically proved to exist in the two ventricles in the present case Dr. Lazarus-Barlow thought that it gave important support to the view that the cause of fibroid heart was syphilis. 3. An Anæmic Infarct of the Liver. This specimen was from a man who sustained rupture of the liver by a "buffer" accident on the railway. It showed an anæmic infarct two inches in length, nearly one and a half inches in greatest width, and one inch in depth. The portion of liver in the neighbourhood also showed hæmorrhagic infarcts. Dr. Lazarus-Barlow had only found recorded 27 cases of infarct in the liver and of these the greater number were hæmorrhagic. He referred to two other specimens in St. George's Hospital Museum, one of which was hæmorrhagic and the other multiple and anæmic. While discussing the pathology of the condition he pointed out that the circumstances under which hepatic infarction occurred were almost always associated with severe constitutional symptoms and probably, therefore, with a low blood-pressure. Besides the low blood-pressure which concerned the hepatic artery there was commonly also some condition, generally embolism, affecting the portal vein. The interaction of these two factors, according to Chiari, accounted for the occurrence of hepatic infarcts and Dr. Lazarus-Barlow was disposed to agree with him.

Dr. ALFRED C. COLES (Bournemouth) read a paper on

The Bacillus of Influenza.

As the result of his observations, the spread of influenza, which was undoubtedly contagious, was not very much influenced by atmospheric conditions, but was directly dependent upon the presence of the bacillus of influenza discovered by Pfeiffer in 1892. This organism possessed the following characteristics: it was the smallest bacillus known, it did not easily stain with the aniline colours, it did not colour with Gram's stain, and when grown on a suitable medium—of which blood-agar was the best—it formed minute transparent dewdrop-like colonies which did not tend to fuse together. The presence of hæmoglobin on the culture medium was essential to the successful culture of the organism, but even then the colonies must be transferred to a new medium every fourth or fifth day. The bacilli were found in the denser purulent greyish-yellow nodules of influenza sputum, where they occurred in enormous numbers, forming often in uncomplicated cases pure growths. In the earlier stages of the disease they were found free in the mucous background of the sputum, whilst

in the later and convalescent stages the majority were found in the protoplasm of the pus cells. The bacilli were very easily killed by dry heat and even by tap-water, and therefore as they contained no spores they probably did not live or multiply outside the human body. The spread of the disease was almost entirely by means of fresh moist discharge from the nasal and bronchial mucous membranes of patients suffering from the disease. The effect of different aniline dyes upon the organism was discussed, but Dr. Coles stated his preference for either dilute 1 in 20 Ziehl's carbol-fuchsin or carbol-thionin. The importance of the early recognition of the organism was pointed out. The fact that influenza might attack patients suffering from phthisis and chronic bronchitis and in them run such an atypical course that it could seldom be diagnosed clinically was insisted upon. For such cases the addition of influenza to the previous disease could only be recognised by discovering the bacillus of influenza in the sputum. This was of the very greatest importance, as such patients might form the centre of infection from which the disease might extend. The bacilli might be found in the sputum for three or four months although sometimes temporarily absent for a short time. Patients suffering from phthisis should, if possible, be protected from the infection of the bacillus of influenza, as in these patients the addition of influenza was often attended with a fatal result.

Dr. W. FLEMING PHILLIPS (Kilchattan, Bute) read a paper on

The Influenza Throat

in which he wished to call attention to a sign of influenza which, from its diagnostic importance, deserved to be called pathognomonic. The sign referred to—which Dr. Phillips first observed in the autumn of 1892—was a congestion of the greater part or the whole of the faucial arch, including, as a rule, the uvula and often the posterior part of the soft palate, the whole area of congestion being indicated by increased redness. But the feature of this affection which distinguished it from all other congested throats was a narrow patch of superficial ulceration on the edge of the anterior pillars of the fauces on both sides symmetrically. This condition was, in Dr. Phillips's experience, all but universally present for months or years after an attack. That it generally remained undiscovered was doubtless largely due to the fact that it was usually painless. This symptom Dr. Phillips believed to be a most valuable and pathognomonic symptom of the disease, for he had observed it in not less than 500 cases.

Mr. CHARLES POWELL WHITE (Leeds) read a paper on

A Case of Primary Carcinomatous Cyst of the Liver

with secondary deposits occurring in an adult male who at no time presented any symptoms pointing to disease of the liver. There were secondary growths in the sternum, clavicles, and extra-dural space. The specimens were shown.

Dr. A. S. WOHLMANN (Bath) read a paper entitled,

The Bacteriology of Rheumatic Fever and Allied Diseases.

Although clinical evidence and analogy pointed more and more strongly to microbial origin of the "rheumatic" diseases, yet bacteriological evidence was very conflicting. The discrepancies were attributable both (1) to unfortunate nomenclature and classification of these diseases; and (2), as Achalme suggests, the bacillus of rheumatism opened the door to the microbes of secondary infection, which might persist alone at the decline of the disease, and explained the numerous cases in which they would appear to be pathogenic. They must therefore first clear the ground by adoption of a definite classification before discussing the bacteriology. The "rheumatic" group of diseases might be provisionally divided into four main classes: 1. Rheumatism—(*a*) acute and subacute rheumatism, and (*b*) chronic rheumatism (which should be distinguished absolutely from "rheumatic gout" or "rheumatoid arthritis"). 2. Gout which may be acute or chronic (with the same limitation). 3. Pernicious arthritis, which term might be substituted for "rheumatoid arthritis," a name so loosely applied as to have almost lost all significance (abroad the term "multiple arthritis deformans" had been largely used). By pernicious arthritis was meant a disease with the most pronounced and definite characteristics, a subacute painful polyarthritis affecting mostly women, symmetrical in distribution, causing spindle-shaped swellings of the joints and no osteophytic thickening or lipping of bone. In addition there were various trophic and toxic symptoms, such as muscular atrophies, glossy skin, cold dripping-wet palms, pigmentation, anæmia, &c., the whole forming a perfectly definite clinical picture (these clinical features were illustrated by casts painted from life). 4. Osteo-arthritis, a chronic condition characterised by osteophytic formation and eburnation of bone. It might occur as the result or as the final stage of rheumatism, pernicious arthritis, or gout, modified as to details of shape by the preceding disease, but as distinct from these as was the dense envelope of fibrous tissue round an embedded bullet from the initial lesion. It was obvious that in this disease one would not look for a microbic origin, while in acute rheumatism and in pernicious arthritis such an origin might reasonably be inferred. As regards the bacteriology of acute rheumatism the work of the principal English and foreign investigators was passed in review from Mantle in 1887 to Singer in 1897. Guttmann, Birch-Hirschfeld, Bouchard and Charrin, Triboulet, Sahli, Sacaze, Grün, and Singer found staphylococci or streptococci, while Achalme, Lucatello, Leyden, and Riva found special organisms. The results of Achalme were confirmed by Thiroloix and by Triboulet and Coyon. These latter observers, however, found that Achalme's bacillus was frequently associated with a diplococcus and was only present alone in severe cases. Achalme's bacillus closely resembled that of anthrax, but was absolutely anaerobic, it stained readily by ordinary methods, and grew best in liquid media at from 30° to 38°C. Its properties were described at some length and microscopic specimens prepared by Achalme were exhibited in the museum. Schüller's bacillus of pernicious arthritis was described and a short account followed of the diplo-bacillus which Dr. Wohlmann, Dr. Bannatyne, and Dr. Blaxall found in the synovial fluid of patients suffering from that disease and which they looked upon as pathogenic. It was a delicate diplococcoid organism, staining with difficulty, and forming on the fourth day "gold dust" floating colonies in flasks of clear peptone beef-broth at 98°F. Chauffard and Ramon had since described an organism in this disease apparently identical with the above.

Mr. W. ROGER WILLIAMS (Bristol) read a paper on

Tumours of Gigantic Size.

Much interest, he said, attached to the study of extreme types of pathological variation and it was desirable to know the limits within which such variations were possible and the special features they presented. Mr. Williams proposed to notice examples of the largest tumours known, some of which were more than double the weight of the entire body of their unfortunate possessors. When they considered the minuteness of the germs whence these big tumours arose and the high degree of organisation which they attained it seemed not unreasonable to regard the force which originated them as analogous to that which determined the development *ab ovo*. It accorded with this, that the largest tumours almost invariably originated from those parts where post-embryonic developmental changes were most active—such as the uterus, ovaries, and mammæ. These large tumours were nearly always of slow growth and of the non-malignant variety. Malignant tumours being for the most part poorly nourished and of rapid growth seldom attained the largest size, owing to the supervention of degenerative changes. To the uterus belonged the distinction of having produced the largest known tumour, the weight of this gigantic formation being 195 lb. The abdominal girth was six feet.

Dr. R. T. WILLIAMSON (Manchester) read a paper on

The Pathology of Syphilitic Affections of the Spinal Cord

in which he recognised the following clinical forms of spinal syphilis and pointed out the associated pathological conditions: 1. Symptoms of compression of the nerve root or of the spinal cord were produced in a few rare cases by syphilitic disease of the vertebræ (syphilitic caries, necrosis, gummata, exostosis, periostitis, and osteitis). 2. In another rare form there were symptoms of meningitis without much evidence of implication of the spinal cord. Pathologically chronic pachymeningitis and lepto-meningitis had been found, and generally the membranes had been united so as to form a thick sheath of adherent fibrous (or gummatous) membrane. 3. In the most common form of spinal syphilis there were meningeal symptoms followed by indications of involvement of the spinal cord—paraparesis or paraplegia, usually with bladder and sensory symptoms. Of the sensory symptoms thermo-anæsthesia, especially

for cold, might be the most prominent. Pathologically meningo-myelitis was found, lepto-meningitis invading the periphery of the cord, small gummatous infiltrations and softening from syphilitic disease of the blood-vessels, the latter being probably the most important change. 4. In some cases paraplegia and bladder symptoms developed suddenly and were usually associated with sensory symptoms (so-called acute syphilitic myelitis). Pathologically these cases might be due to softening following syphilitic disease of the blood-vessels which had produced thickening of the vascular walls and narrowing or obstruction of the lumen. In a case examined by Dr. Williamson there was spinal hæmorrhage (chiefly into the grey matter) with some surrounding softening, and these changes were associated with, and apparently secondary to, thrombosis in blood-vessels within the cord which presented syphilitic disease (endarteritis and periarteritis). In a third group of cases the changes corresponded to those of so-called idiopathic myelitis (unassociated with syphilis) and possibly some of these might be instances of non-specific myelitis occurring accidentally in a syphilitic subject. 5. In the cases presenting the symptoms of Erb's chronic syphilitic spinal paralysis very few pathological examinations had been made, but in a case examined by Dr. Williamson there were scattered and irregular patches of softening or gummatous infiltration in the posterior and lateral columns of white matter and mostly at the periphery of the cord. There was also marked syphilitic disease of the blood-vessels and slight lepto-meningitis. 6. In a case of chronic syphilitic paralysis (which did not correspond to Erb's type, but in which the symptoms indicated a lesion of the dorsal part of the cord) Dr. Williamson found sclerosis of the postero-median columns begining in the lowest cervical region and gradually increasing towards the upper cervical region, sclerosis of the crossed pyramidal tracts from the upper cervical to the lowest lumbar region, and sclerosis of the direct cerebellar tracts in the cervical and dorsal regions; the pia mater was also thickened in the cervical regions. A few similar cases were on record. 7. In rare cases the symptoms of spinal syphilis corresponded to those of a spinal tumour and were due to a gumma of the meninges of the cord. 8. In addition to the varieties of spinal syphilis mentioned there were many anomalous forms. 9. Finally, locomotor ataxia must be mentioned as probably a post-syphilitic degeneration.

Erratum.—We regret that the Presidential Address by Dr. J. F. Payne in the Section of Pathology which appeared in THE LANCET of August 12th had an incorrect title appended. The title should have been "The Question of Simple and Specific Inflammations."

DISEASES OF CHILDREN.

FRIDAY, AUGUST 4TH.

The PRESIDENT of the section (Mr. EDMUND OWEN) took the chair. He was supported by Mr. James Green (Vice-President) and the two Secretaries (Mr. A. H. Tubby and Dr. Tullis).

Mr. JOHN LANGTON (London) opened a discussion on

The Treatment of Inguinal Hernia in Infancy and Childhood.

He said that not very much attention had been paid to that subject in the case of children and that he proposed to confine his remarks to children of the age of 10 years and under. The inguinal variety was much the most common. Curiously enough, Jewish boys were frequently affected. The inguinal hernia was generally found on the right side, probably because the vaginal process on the right side was nearly always patent at birth, the left one being generally closed. The preventive treatment would partly consist of attention to diet and digestion as the flatulent distension of the body caused great pressure on the abdominal walls and so a tendency to hernia. Mr. Langton did not regard circumcision as a preventive, for phimosis did not do much to produce rupture. The Jews (as said above) were particularly liable to hernia and sometimes circumcision itself, owing to the crying and struggling when the wound was dressed, caused rupture. Also the muscular act of micturition was performed more by the intrinsic muscles of the bladder and not so much by the abdominal muscles. Exercise of the abdominal muscles was very necessary. Mechanical treatment was by spring truss or wool skein. If treated at once no operative treatment would be adopted or even discussed. The wool skein was thoroughly unsatisfactory, the knot was rarely in the right place, the truss was dirty, and, both in theory and practice, it failed to retain the hernia. The truss should be selected and applied by the surgeon with not too strong a spring, and it should give pressure sufficient to cause closure of the opening in the abdominal walls. It should be covered with soft rubber, kept perfectly clean, and should never be allowed to be greasy. It should be, at first at all events, worn day and night, and should be begun directly the rupture was discovered. These cases in private practice did better than in hospital work. How long should the truss be worn to secure a permanent cure? When worn before the child was a year old it should be kept on till five years of age, if not worn before seven years of age it should be kept on till puberty. The decrease in the number of cases later in life was marked, so that the prospect of a permanent cure was encouraging. When there were both an umbilical hernia and an inguinal hernia the latter should be treated first, for if the umbilical hernia was repressed there was more pressure at the inguinal aperture from within. With regard to operative treatment indications were not often present. There was practically no canal and the muscular and other structures were too soft to be got hold of by sutures. No operation should be done before the age of five or six years except in urgent cases, such as a strangulated rupture, a congenital hydrocele, fluid in the sac, or a non-retainable rupture where a truss had been worn for three or four years with no result or where the mother could not manage the child properly.

Mr. FREDERICK EVE (London) considered that if the practitioner were to clear his mind of all preconceived ideas of hernia he would close the opening and tie up the process. He commented on the unsatisfactory results from trusses due to ignorance and carelessness of parents and nurses. In these cases an operation was necessary. He would operate in the cases mentioned by Mr. Langton, also in those complicated with undescended testicle (he considered that to be dangerous; it might get twisted and was liable to injury or the risk of new growth). The gland was generally ill-developed and tended to retrograde. Also he would operate in cases of large hernia. Was the operation dangerous? He had only a small number (28 under the age of 11 years) to quote from, which he said was a proof that at all events he had not operated wholesale or at random. Of these four were strangulated, 17 were under two years of age, and five were under one year; four wore a truss for a few months after operation; there were no deaths and only two cases of suppuration. It was a satisfactory operation. As to the choice of operations he usually in young children opened over the external ring, separated the sac as high as possible, and pulled out, transfixed, and tied with silk. The aponeurosis of the external oblique was sutured. In older children he practised Rossini's operation.

Mr. ROBERT CAMPBELL (Belfast) considered that phimosis did have some causative effect on hernia. He praised the wool-skein truss and thought that parents would complain if trusses had to be worn so long as Mr. Langton had advised. The operation was very successful and he agreed with Mr. Eve as to the kind of operation to do at various ages. The silk sutures did not cause suppuration but might make their way out after a time. He preferred catgut prepared with formalin.

Mr. HENRY A. WHITELOCKE (Oxford), whose experience had been chiefly in connexion with private patients, on the contrary preferred the spring truss and was quite dissatisfied with the wool skein. He generally did the simple operation described by Mr. Eve, carefully separating out the sac. He had not used a truss after the operation. He would operate in much the same class of cases as mentioned by previous speakers.

Mr. GEORGE HEATON (Birmingham) thought that one great advantage of the wool-skein truss was that it was so inexpensive and he had seen a great many cases get well under its use. The use of a truss to be effective must be persistent. He never performed the operation for radical cure without first trying a truss, except in impossible cases. He preferred the simple operation and kept the child on its back for a month after it.

Mr. DAMER HARRISSON (Liverpool) thought that no operation was required except in the class of cases already mentioned. He did not remove undescended testicle but drew it down and fixed it in the perineum. He liked the simple operation and hardly ever used a truss afterwards.

The PRESIDENT of the section, dealing with the association of phimosis with hernia, considered that it was one factor in the persistence of the hernia and he always operated on the phimosis first. He knew of no age-limit to the operation, which should be the simple one. Torsion of the sac he held to be fraught with danger. "Radical cure" was a wrong use of terms, it was a radical treatment. He used silk for everything and thought that the wool-skein truss was an excellent method of treatment. He agreed with Mr. Heaton that the child should be kept on its back for a month after the operation. The undescended testicle was so often undeveloped that he would remove it.

Mr. MCADAM ECCLES (London) regarded digestive disturbances as a great cause of rupture, so that a strict regimen of diet was valuable. Badly-fed children often did badly after operation. After the age of five years operation should be recommended, the diet being regulated and a truss tried first.

Mr. LANGTON replied, mentioning that in early days he practised Wood's method of radical treatment but had given it up. Though for other reasons he approved of circumcision he had no belief in its having any influence on hernia. Both parents and nurses could be educated to do their work in connexion with trusses very well. He had seen 3200 cases under the age of one year and had seen very excellent results. Cases of partially undescended testicle were not satisfactory if left alone, the testicle should be drawn down and fixed in the scrotum. He had only seen three cases of malignant disease in an undescended testicle. When a truss was properly adjusted the digestion improved and the child gained in weight. The term "radical cure" was a misnomer. He was doubtful if the wool-skein truss was really cheaper in the end than a spring one, owing to the very constant renewals which were necessary.

Dr. MANSEL SYMPSON (Lincoln) read a paper on

The Treatment of Rickets in an Out-patient Department.

The two great principles of out-patient treatment were simplicity and directness. There was always a great doubt whether the directions of the physician or surgeon were attended to outside the hospital, the medicines taken, or the applications made. Also, by directness of treatment explained to the parents they would be on the side of the medical man and not against him. These remarks applied especially to the treatment of rickets as it was a lengthy process, conducted chiefly at home, and the attention to the patient was so almost completely a duty for the parents. He treated all cases of rickets from the age of one and a half years to five years in much the same way, allowing of course for age in medicines. Attention to diet was of prime importance. Starchy foods should be cut down and the fat of hot bacon, dripping (a most valuable form of food for children), soup, broths, and gravy should be ordered. Cream also was a valuable addition to the milk food of very young children. He gave as a routine practice cod-liver oil and syrup of the phosphate of iron, sometimes omitting the oil in hot weather, and in cases of syphilitic or tuberculous tendency replacing the iron by syrup of iodide of iron. For treating the deformities of the lower limbs outside splints were put on and left on for three weeks or a month in winter and for a fortnight in summer. They should project at least four or five inches below the feet so that if the child did get about on them there was very little weight transmitted through the legs. It was easy to explain to parents by the analogy of a stick of warm sealing-wax that the soft bones would bend if pressed on longitudinally, hence the great value of rest and pressure could be put on them to help all they could in the plan of campaign by the suggestion that the only alternative lay in operation, an alternative—after what was said in that section on Wednesday—not lightly to be recommended. Absolute cure would be promised in nine months' or a year's treatment.

Dr. F. J. POYNTON (London) read a valuable paper on

Cardiac Overstrain in the Young,

describing the methods and results of observations on lads in training and after racing. Great care should be exercised in debarring lads without absolute cause from their sports; as Dr. Poynton remarked, it was bad to tell boys to play games badly. He then discussed the relations of the heart to school games.

Mr. HEATON read an account of

A Successful Case of Splenectomy for Rupture of the Spleen,

making the seventh recorded case. A boy, aged nine years, was run over across the abdomen by a wheel of a heavy cart. There was no external wound. There were bruising on the left side and dulness on percussion. He was blanched, restless, and the pulse was very weak. The diagnosis was rupture of the liver or the spleen. Five hours after the accident the abdomen was opened and some blood escaped from the peritoneal cavity. Two-thirds of the spleen were found to be torn away; the bleeding was furious. The blood-clots were cleared out, the vessels were ligatured, and saline fluid was injected. Vomiting ceased one day after the operation. The temperature remained high and the patient rapidly became emaciated and very anæmic. His pulse varied from 110 to 120 and the cervical glands were enlarged. Five days after the operation there were 60,000 leucocytes per cubic millimetre instead of the normal 7000. Nearly all cases of removal of the spleen had enlargement of the lymphatic glands. There was a large actual increase in the large mono-nuclear and transitional leucocytes; there was no particular change in the quantity of red blood corpuscles save from the loss of blood. The anæmia was recovered from very slowly and from 10 to 14 days after the operation there was pyrexia.

Dr. J. PRIESTLEY (London) then read an account of an interesting case of Infantile Hemiplegia.

LARYNGOLOGY AND OTOLOGY.

FRIDAY, AUGUST 4TH.

Dr. JOBSON HORNE (London) gave a lantern demonstration on

The Pathogenesis and Etiology of Pachydermia Laryngis

and an explanation of some of the clinical features to which it gave rise. In his opening remarks Dr. Horne briefly spoke of "pachydermia laryngis" as a term descriptive of the hyperplasia or numerical hypertrophy of the cells forming the epithelium of the larynx. Associated with this hyperplasia there was usually a neoplasia and a latter phase was a metaplasia, so that a squamous variety of cells was met with where formerly the cylindrical variety existed. For the characteristic neoplasms commonly met with at the local processes and in the inter-arytænoid region the term "pachydermia verrucosa laryngis" was used in distinction from a "pachydermia diffusa." In drawing this distinction it was important to bear in mind that the pathogenesis of the two varieties was essentially the same and that the warty form was only a more advanced phase of the diffuse. By means of lantern photographs of specimens (for one of which he was indebted to Dr. Herbert Tilley) the macroscopic appearances of the epithelial changes in their several stages were demonstrated. Concerning the pathogenesis of the disease Dr. Horne said that the hyperplasia was occasioned by an irritant exciting the formative power of the cells. This irritant might be traumatic, toxic, or infective in nature. The hyperplasia might be the outcome of a persistent laryngitis and so a localised disease. Dr. Horne expressed the opinion that in the majority of cases the laryngeal condition was more than "skin deep" and was merely a local manifestation of a more distant and perhaps widespread disease. In demonstration of this view lantern photographs were shown of microscopic sections with tuberculosis underlying the hyperplasia. Syphilis was also instanced as an irritant and sections from such cases were shown with the diffuse variety well marked. He next considered the structures underlying the epithelium—the blood-vessels, the inter-cellular tissue, and the muscle fibre. Well-marked increase both in the size and number of the blood-vessels had been met with immediately beneath the epithelium. Whether this hyperæmia was to be regarded as a factor in the hyperplasia or whether it was only secondary to the hyperplasia, the tissues exercising some power in regulating their own blood-supply, for the present he could not say. The changes met with in the submucous structures varied with the cause of the pachydermia; in some cases he had met with a well-marked and extensive inter-glandular deposit of strands of fibrous tissue and lantern photographs of this condition were shown. A fact of clinical importance was that several such cases were associated with chronic interstitial nephritis. This fibrosis at times extended to the

intrinsic muscles interlacing and compressing the bundles of fibres. A myositis was also referred to. To these myopathic changes was to be attributed the impaired movement or fixation of one or both cords. Perverted function or excessive function was not only a factor in the pachydermia, but was also to be regarded as in some measure secondary to the condition. In explaining some of the laryngoscopic features Dr. Horne expressed himself at variance with the explanations usually offered for the formation of the excrescence and corresponding dimpling on the vocal processes, the dimpling on the one cord being often attributed to an indenting by the excrescence on the other. Dr. Horne said that when in pachydermia this phase was reached each vocal process presented a dimple and each an excrescence; the dimpling was usually more marked and more obvious on one cord, commonly the left, and the excrescence on the other, commonly the right. In the normal larynx of an adult there existed behind and below the vocal processes and running parallel with the true cord as far as the anterior cartilaginous body a line or furrow; this might be duplicated and it varied in its extent and depth. The vocal process was a *point d'appui* and these lines for the present might be called "lines of traction." The condition met with about the vocal processes in pachydermia was an exaggeration of this normal state, the hyperplasia causing the furrows and ridges to be more marked. The reason offered for the dimple being more marked on one side and the excrescence on the other was that the cords, in order that the contact of these ridges might be avoided, were brought into different planes. From the one on the higher plane the outgrowing ridge became the excrescence and was usually the cord in which movement was more impaired; the cord on the lower plane was commonly the more active one and the furrows were deeper. The dimple on the one side corresponded with a ridge on the other, but was not directly occasioned by it. Dr. Horne, in concluding, submitted that pachydermia was best regarded as evidence of disease, and that in restricting their views to the epithelium of the larynx they were apt to miss a very valuable clue to more serious and distant disease.

Dr. HERBERT TILLEY (London) remarked upon the value of the sections that had been shown and detailed the clinical aspect of his case to which reference had been made. The patient was a woman, aged 52 years, who was addicted to alcohol. She came to the hospital on account of dyspnœa. The dyspnœa was so marked that the patient was admitted and the tracheotomy instruments were kept by her bedside. However, rest in bed and purgation relieved the dyspnœa, so that it was only noticeable on exertion. Laryngoscopic examination showed a large inter-arytænoid mass, fixation of both vocal cords, and the glottis reduced to half its size. The patient was jaundiced, there were a marked systolic bruit and a very irregular pulse, the feet and legs were very œdematous, the abdomen was distended, the liver was enlarged and hardened, and the urine contained a trace of albumin. The dyspnœa and œdema of the legs disappeared and the patient left the hospital after a stay of a week feeling quite well. Four days later she fell dead whilst walking across her room. Only the larynx could be removed post mortem and the section had been seen. A small incision was made on to the liver which was of the typical hobnailed variety of cirrhosis. The speaker had never seen a case of pachydermia producing such severe symptoms of dyspnœa or forming so large a projection into a glottic aperture and it admirably bore out Dr. Horne's suggestion that such a condition was only a local manifestation of a general fibrosis.

Dr. PEGLER (London) and Mr. JACKSON (Plymouth) also joined in the discussion, to which Dr. HORNE replied.

Dr. ERNEST WAGGETT (London) detailed a case of

Cerebellar Abscess Secondary to Chronic Middle Ear Suppuration: Evacuation; Recovery.

The case was of interest because only 12 instances of recovery after operation appeared to be recorded hitherto. The patient, a man, aged 26 years, presented himself with neglected suppuration in the right ear dating from childhood. For three weeks he had experienced giddiness and local pain. A large polypus was removed from the ear with relief of the symptoms. Three weeks later the symptoms returned and a plug of wool which had been introduced by the patient was found imprisoning foul pus behind it. Right complete facial palsy suddenly supervened and a mastoid operation was accordingly performed. In spite of the excellent local condition which resulted the palsy did not improve and the patient gradually became worse, complaining of "liver," loss of appetite, constipation, and foul breath. At the end of three weeks he had for several days experienced severe vertigo on movement of the head, accompanied by vomiting. He lay in bed on the left side complaining of severe pain in the right occipital region. Local tenderness and torticollis were absent. The right pupil became sluggish and dilated and the optic discs were pink and indistinct. The knee-jerks were exaggerated and the gait was staggering, but forced movements could not be made out. There was slight ataxia of the right arm but the grip was equal on the two sides. The temperature was a degree under the normal for four days and the pulse ranged from 65 to 60. There was absence of hearing by bone-conduction on the right side and probable destruction of the nerves in the internal auditory meatus. The skull was trephined one and a quarter inches behind the external auditory meatus over the lateral sinus which was healthy. The pulseless brain bulged both above and below this vessel. First the cerebellum and then the temporo-sphenoidal lobe were explored in 20 directions to the extreme limits with Horsley's pus seeker. No abscess could be found. Five days later the patient appeared to be dying. Marked swelling of the left optic disc had appeared and the knee-jerks, which were previously exaggerated, were now in complete abeyance. Both the cerebrum and the cerebellum were pulseless but the latter alone bulged into the wound, which was quite aseptic. After further exploration with the pus seeker the left index finger was inserted into the cerebellum first towards the internal auditory meatus and then to the apex of the petrous bone. When the whole length of the finger (three and a quarter inches) had entered the wound a rounded elastic body, which must have been displaced more than once by the pus seeker, was felt between its tip and the tentorium above it. The pus seeker was caused to penetrate and one and a half ounces of foul green pus came away. The pulse-rate immediately increased in frequency. While inserting two decalcified bone tubes a small quantity of cerebro-spinal fluid escaped. With the exception of a lateral nystagmus lasting some few days and paralysis of the right external rectus which at times still caused slight diplopia the recovery of the patient to excellent health was rapid. The optic papillitis had subsided by the fourth day and the patient was walking about without any giddiness within a month of the operation. During the third week he exhibited the voracious appetite noted by other writers. The facial palsy persisted. For three months his general health had remained excellent and he was now following his usual employment.

TROPICAL DISEASES.

FRIDAY, AUGUST 4TH.

Surgeon-Colonel KENNETH MACLEOD (Netley) read a paper on

Thermic Fever (so-called Siriasis) with Special Reference to its alleged Microbic Causation.

The paper was devoted to a criticism of an article by Dr. Sambon in the *British Medical Journal*.[1] Dr. Sambon had in this paper contended that so-called thermic fever was not due to heat *per se*, but to a microbe. Colonel MacLeod stated that there was not sufficient evidence to justify the notion either that the disease was microbic in origin or to place it in a category of disease other than thermic. The term "siriasis" was objectionable in many ways. Its mythological connexion with the rising and setting of the dog-star (Sirius) did not advance knowledge, and heat fever was by no means limited to the dog-days (July 3rd to August 11th). The attempt to exclude dynamic influences from pathology was a vain one; the real issue being as to their kind and quality. Similarly the balance between thermogenesis and thermolysis was governed by the nervous system. Toxins disturbed the balance, perhaps, by producing more heat than could be readily dispersed or by impairing or disturbing the mechanism which set up certain dispersing agencies. The pyogenetic influence of toxins was quite consistent with heat regulating nervous arrangements, which might also be disturbed by other means and not antagonistic

[1] Remarks on the Etiology of Sunstroke (Siriasis), not Heat Fever, but an Infectious Disease, Brit. Med. Jour., March 19th, 1898.

to them. Stiles had shown that blood which was taken from subjects of heat fever and injected into a healthy subject did not induce any pathological disturbance. Dr. Sambon's arguments were based on analogy and on a process of exclusion. These were both treacherous methods of arriving at a conclusion, and they seemed in this case to have led to fallacy. Colonel MacLeod compared the chilling with the overheating of the body, and argued that if a microbe was claimed for one it might be applied in the other. If "heat-stroke" in some instances behaved as an epidemic disease so also did "cold-stroke," yet no one had as yet suggested a microbic origin for the latter. The exhaustion of the function of the viscera succeeded to over-action, and in the same way continued exposure to heat impaired the power of resistance to heat, and one of the principal sequelæ of heat-stroke was an incapacity to endure or resist heat. It seemed reasonable therefore to believe that fatigue of the heat-regulating nervous centres as well as of the heat-dispersing agencies constituted an essential factor in the production of heat fever.

Major GILES, I.M.S., stated that the peculiar geographical distribution of sunstroke helped to support Dr. Sambon's views. He found in the Cape Colony during hard work in the sun that the troops, although wearing only Glengarry caps, never suffered from sunstroke.

Dr. SAMBON (London) said that a number of writers such as Dr. Patrick Manson, Professor Osler, and several Anglo-Indian physicians, believed that heat alone could not account for siriasis and that he agreed with Cagicol who ascribed the disease to a parasitic origin; also, that Gleson in America had given an accurate description of a microbe. In Dr. Sambon's opinion the disease was caused by a toxin, the origin of which would no doubt shortly be discovered.

Dr. JAMES WATSON (Southsea) had seen sunstroke occur chiefly in men who in the absence of sufficient food had partaken largely of alcohol.

Dr. PATRICK MANSON (London) defended the line of argument followed by Dr. Sambon, and held that there was much presumptive evidence in favour of the parasitic nature of siriasis.

Lieutenant-Colonel BOILEAU, A.M.S., described the effects of high temperature at night and in the day. On coming in from the march or work the man felt seedy and out of sorts, his skin became hot and dry, micturition was frequent, he slept badly, and should he drink alcohol he might develop heat-stroke. Lieutenant-Colonel Boileau believed that the heat-regulating centres were exhausted.

Surgeon F. W. PARKER, R.N., did not believe that the hyperpyrexia was caused by heat, but was inclined to ascribe it to the direct rays of the sun.

Lieutenant-Colonel WOOD, R.A.M.C., stated that in Cyprus, in 1897, heat apoplexy and hyperpyrexia developed in men living in tents with a temperature of 120° F., and did not believe that it could be microbic.

The PRESIDENT of the section (Dr. THIN) was inclined to ascribe heat-stroke to heat and to the direct rays of the sun, especially in moist air. In places where the air was dry sunstroke was unknown. Dr. Thin believed that sunstroke was often caused by the reflected solar rays acting through the eyes.

Dr. RHO (Italy) stated that the literature which was collected by Dr. Sambon on the subject of siriasis seemed to point to two different diseases—one the real sunstroke or *coup de chaleur*, sporadic in character, with but little increase in temperature; and a second, epidemic in nature, with hyperpyrexia. The latter—the "siriasis" of Dr. Sambon—Dr. Rho was inclined to think was of the nature of an infectious disease.

Lieutenant-Colonel C. J. MCCARTIE, I.M.S., read a paper on

The Cause and Prevention of Heat Apoplexy in the Army.

He attributed the prevalence of heat apoplexy amongst soldiers to the warm clothing which they wore and to the fact that their clothes were so buttoned up and strapped down that the air could not circulate about the body, and as the evaporation of the perspiration could not go on nature's apparatus for keeping the body cool was not allowed to act; consequently the temperature must rise.

Staff-Surgeon O. W. ANDREWS, R.N., read a paper on

Antivenene.

Snake-poison, Staff-Surgeon Andrews stated, was composed of at least two distinct poisons—one possessing the power of producing hæmorrhagic extravasation, which was destroyed by heating a solution of venom to 85° C., and another (or others) which was not destroyed by heating to 100° C. A temperature of 102° C. for 20 minutes completely destroyed all the toxicity of the venom. M. Calmette maintained that the action of serum was in no way a chemical reaction, but a physiological process by which the white corpuscles were stimulated to carry on intra-cellular digestion, which he regarded as a variety of phagocytosis. M. Calmette advised no relaxation of the ordinary mode of treatment adopted in snake-bites, such as ligatures, &c., and as an additional precaution he advised the injection into the seat of the bite and around it of a solution of 1 in 60 of chlorinated lime or of 1 in 100 of chloride of gold. Ammonia and stimulants were contra-indicated. The speaker submitted the results of a series of experiments which had been performed by Major Semple, R.A.M.C., Major Lyons, I.M.S., and himself. The experiments showed that, when a dose of venin calculated to cause death in six or seven hours was injected into an animal, the animal would survive if 10 cubic centimetres of serum were injected subcutaneously one or two hours afterwards, or 20 cubic centimetres three hours afterwards.

Mr. D. T. REES (London) stated that he had seen marked thrombosis of all large veins of the leg which had been bitten.

Surgeon-Colonel MACLEOD remarked that it was not necessary to inject sufficient serum to counteract the full poisonous power of the venom but only enough to neutralise the surplus venom which caused death.

Blackwater Fever.

Inspector-General W. H. S. STALKARTT, R.N., read a paper on Blackwater Fever.

Dr. SAMBON ascribed a precise influence to geographical distribution. He denied the power of quinine to produce the disease and considered it a specific ailment and not malarial.

Dr. PATRICK MANSON tabulated his opinions under two heads. First, arguments for regarding blackwater fever as being a malarial disease: (*a*) that it occurred in highly malarial districts; (*b*) that the malarial parasite was often found in the blood; (*c*) that it occurred in people who had had many attacks of malaria; and (*d*) that it occurred only after prolonged residence and consequent malarial saturation. Secondly, arguments against regarding it as being a malarial disease: (*a*) its limited geographical range; (*b*) that the malarial parasite was not always found; (*c*) that it was not certain that the fevers preceding attacks of blackwater fever were really all of them malarial in character; and (*d*) that cases had occurred within a short time of the patient's arrival.

Mr. REES said that he had seen cases in the West of Africa occur within two or three months after the patient's arrival there. He said that there was no disease in which there was so marked a destruction of blood as in blackwater fever; and he had observed that the seasons of the year at which malaria and blackwater fever occurred did not correspond.

The PRESIDENT of the section, Surgeon-Colonel MACLEOD, Dr. RHO, Dr. PARKER, and Captain W. MOULD, R.A.M.C., joined in the discussion, in the course of which it was stated that hæmoglobinuria occurred in India occasionally, but that the attacks were usually put down as being malarial.

Major GILES, I.M.S., observed that in India the disease was not specially fatal and it would seem as though they were distinct diseases.

Captain W. J. BUCHANAN, I.M.S., communicated a paper on

Dysentery as a Terminal Symptom of Disease in the Tropics.

Captain Buchanan recorded 28 cases of dysentery supervening in the last stages of chronic diseases in India, and said that terminal dysentery, as he termed it, might set in three or four weeks before death occurred.

Dr. PATRICK MANSON remarked that these cases illustrated the fact that in healthy conditions, when resistance was normal, one of the germs of the many forms of dysentery might be present in the alimentary canal and not cause pathological effects, but that with weakened powers the germ assumed control.

Dr. SAMBON said that the cases recorded by Captain Buchanan gave evidence of the latency of parasitic power in

healthy persons, but that given an unhealthy state the parasites manifested themselves. They were acquainted with the special prevalence of terminal dysentery in leprosy asylums in India. Dysentery was very difficult to get rid of when once a dwelling became infected.

Surgeon-Major A. S. FAULKNER, I.M.S. (retired), contributed a paper on

Malarial or Climatic Neuralgia and its Treatment.

The symptoms characterising the disease were periodicity, confinement of the pain to one set of nerves at a time but its shifting from one branch to another in that set, a slight rise in temperature during attacks of pain, subsequent depression, and lassitude. Quinine was the potent remedy in neuralgia of this kind.

Captain M. LOUIS HUGHES, R.A.M.C., read a paper on

The Geographical Distribution of Undulant (Malta) Fever.

The geographical limitation of the endemic prevalence of this fever appeared, he said, to be primarily a question of temperature. Well-authenticated cases were reported from Gibraltar, the Balearic Islands, Sardinia, Sicily, Southern Italy, Greece, Crete, Cyprus, Smyrna, and the North African coast, and in the Red Sea littoral as far as Massowah; the disease occasionally occurred in several towns on the north coast of the Mediterranean. Cases were reported from certain parts of India, Hong-Kong, and Porto Rico, and analogous cases were described as occurring in Zanzibar, China, Monte Video, Venezuela, the Mississippi Valley, Fiji, and South Africa.

THE ANNUAL MUSEUM.

(Concluded from page 539.)

V.—MINERAL WATERS, BEVERAGES, ETC.

The exhibits in this section were more or less a repetition of those displayed on previous occasions. There were, however, one or two comparatively new natural mineral waters with which we deal further on. Perhaps the most imposing exhibit, as it was comprehensive also, was that of the Apollinaris Company, Limited, 4, Stratford-place, Oxford-street, London, W. Here side by side were Apollinaris water and Johannis water. We have already published our own analytical account of these waters. Both belong to the saline and alkaline carbonated class of water. They have taken a recognised place in dietetics which is sufficient evidence of their appreciation by the public. A recent departure consisting in the addition of definite amounts of mineral salts such as bicarbonate of lithia and potash has recently been taken by this company. We have pointed out the advantages of both lithia and potash being exhibited in a natural mineral water. As examples of natural purgative waters this company exhibited Apenta water containing the sulphates of magnesia and soda, and Friedrichshall water milder as a purgative but rich in chlorides, which makes it alterative and decidedly diuretic. As an example of a natural ferruginous water recently introduced into this country by Mark Whitwill, Son, and Judge (6, St. Helen's-place, London, E.C.) should be mentioned that bottled at the spring in the mountains of Orezza, Corsica, and known as Orezza water. We published an analysis of the water in THE LANCET, of April 29th, 1899. It contains iron in the ferrous condition, sodium carbonate, and common salt, with traces of manganese and arsenic. It is stated that the water has proved useful in anæmia and chlorosis. Hunyadi Janos water (Andreas Saxlehner, Trafalgar-buildings, Charing-cross, London, S.W.) has now been before the public for years and has enjoyed a confidence due doubtless to the fact of its constant composition. It contains the sulphates of magnesia and soda in almost equal amounts and according to our own experience this ratio never varies.

The municipality of Harrogate exhibited a working model illustrating the balneological methods adopted at that well-known spa. Besides were exhibited the natural mineral waters, comprising sulphur, iron, and saline water, and specimens of the salts obtained on evaporation of these waters were submitted for inspection. An excellent display of artificial mineral waters was furnished by Idris, Limited, of Pratt-street, Camden Town, London, N.W. The majority of the exhibits were syphons fully charged, the sparkling clearness and brightness of the waters making the exhibit attractive. This firm takes every precaution to ensure the purity of the water selected for "carbonating" purposes. We believe that the water is derived from a very deep Artesian well, and is examined again and again both chemically and bacteriologically. Condal water is sharply distinguished from other natural aperient waters by containing chiefly sulphate of soda with only a small quantity of the corresponding magnesium salt. It is bottled at the springs at Rubinat under the personal supervision of the company's representatives (The Condal Water Co., Limited, 38, Walbrook, London, E.C.).

An interesting group of photographs of the baths and pump-room and of the surrounding country of Leamington were shown by the Borough of Royal Leamington Spa. On the same stall were the natural mineral waters of that place which are bottled plain, aerated, and concentrated. We have before brought to the notice of the profession at a length which the merit of the invention justified the system of aerating water by means of sparklets (Aerators, Limited, Broad-street Avenue, London, E.C.). By this system plain aerated water or mineral waters can be instantaneously prepared with a minimum of trouble and cost. The waters of Kronthal are pure and pleasant natural aerated waters for both table and medicinal use. The blue label is best adapted for table purposes; the red label on account of its mineral constituents is calculated to maintain the alkalinity of the blood and on this account has probably been found of benefit in gout; the green label contains iron in the unoxidised state and has been prescribed as a ferruginous tonic chiefly in anæmia and chlorosis. The London agency is at 53, Berners-street, Oxford-street, W. An interesting collection of mineral waters was shown by Messrs. Ingram and Royle of East Paul's Wharf, 26, Upper Thames-street, London, E.C. The space was chiefly devoted to specimens of the natural mineral waters of Vichy which have a reputation in the treatment of stomach, kidney, and liver disorders. The exhibit included also the natural Sprudel salt prepared from this well-known mineral water. The Vitæ Ore Company, Limited, of 39, Temple-chambers, Temple-avenue, London, E.C., showed some curious specimens of Vitæ Ore taken, it is said, from a dried-up spring. As we have shown in our analytical columns this ore when shaken up with water yields chiefly a solution of ferrous and ferric sulphate. It is said to be an excellent chalybeate, well borne, and a restorative in bloodless conditions.

It is convenient to include in this section certain preparations such as medicated wines, beverages, lime juice, spirits, &c., which have special claims. For example, Messrs. Stephen Smith and Co. (Malmesbury-road, Bow, London, E.) devoted most of the space allotted to them to their well-known Coca Wine which is made at constant and definite strength exclusively from coca leaves. The port wine used is of good quality. At the same stall the Keystone Beef Wine was submitted. This like the previous article has been analytically commented on in our columns. Both are excellent preparations. Quite recently again we had occasion to examine in THE LANCET Laboratory the beef and malt wine of Messrs. W. Glendenning and Sons, of 67, Shaftesbury-avenue, London, W. This wine is made from an excellent Douro port wine, Kepler malt extract, and Mosquera beef jelly. The exhibits also included Serravallo's tonic bark and iron wine the analysis of which we have given; a whisky known as Calleyvat, said to be a blend of fine Highland malts kept in wood for seven and 10 years and well suited for medicinal purposes; a special Irish whisky, and lastly a very good peppermint liqueur. The "Specialité" lime juice cordial and lemon squash of Messrs. Feltoe and Smith, Limited, 25, Augustus-street, Regent's-park, London, N.W., are excellent preparations, every care being taken to select only sound fruit, thus ensuring a freedom from musty flavour in the product. Both preparations make refreshing and wholesome beverages mixed with plain or aerated water. Messrs William Gaymer and Son of Attleborough, Norfolk, submitted samples for tasting purposes of their prime Norfolk cider. Our laboratory report has shown that these growers possess the knowledge of how to make wholesome and sound cider. A liqueur Scotch whisky to which special attention has been given in making it mature and soft was offered for sampling to the visitors by Mr. W. J. Ward of Edinburgh, whose London branch is situated at 84, Clerkenwell-road, E.C. This whisky gives excellent results on analysis and evidence of being old and mature by its

mellow flavour. The Bellawattee Company, of 244, Oxford-street, London, W., explained the principle of their patent teapot, of which numerous models were shown. It aims at preventing the extraction of astringent principles while abstracting all the wholesome principles of tea. Quite recently we reported from THE LANCET Laboratory on the quality of the brandy submitted to us for analysis by Edward Archer and Co. of Great Malvern. The evidence of analysis was in favour of the statement that this is in reality a spirit distilled from wine. It is well matured and its flavour is soft. One of the best-known lime-juice cordials is that known as 'Stowers', examples of which were exhibited by Alexander Riddle and Co. of 36 and 38, Commercial-street, London, E. Lime juice is an excellent summer drink when diluted with aerated water, but it is essential that the fruit selected should be of the best kind. Judging from the satisfactory flavour of this lime juice there is little doubt that this is so.

VI.—PUBLICATIONS.

There were a few publishers to whom space had been allotted for exhibiting their recent publications, the interest of the visitors being mainly attracted at these stalls to the excellent plates which were shown in some new and large medical works. The publishers represented were Mr. H. K. Lewis of 136, Gower-street, London, W.C., and Mr. Henry Kimpton of 82, High Holborn, London, W.C. We were glad to see that that admirable invention of Mr. T. Bowater Vernon known as the "Ceres" automatic letter and card files was brought to the notice of the visitors. It is very correctly described as a time-saving appliance and is the simplest and most satisfactory plan of keeping letters and papers in their proper places, so that the worry of referring to past correspondence and other matters is quite avoided. The Ceres dépot is at 10, John-street, Adelphi, London, W.C. Mr. B. Allsop, publisher, of Shipley, Yorks, had a stall on which his day-book was shown illustrating the A.B.C. system of medical book-keeping. The system is literally as easy as A.B.C.

VII.—MISCELLANEOUS.

The miscellaneous objects were comparatively few in number, consisting mainly of some special kind of clothing or other fabric claiming some sanitary quality or special application in medical work. Such for instance was the Alione clothing, a system which enables the comfortable and quick dressing of infants and invalids. The company, whose manufactory is situated at 17, The Broadway, West Norwood, London, S.E., demonstrated this method of dressing by means of models, the whole process from beginning to end not occupying more than five minutes with a minimum amount of turning about of, or disturbance to, the patient. Messrs. Boyd and Co. of Belfast and 292, Regent-street, Langham-place, London, W., exhibited examples of "the doctor's ulster" and other suitable clothing. They showed also a new all-wool material called "naquatum" which is porous as regards air but quite waterproof. Lastly, we should mention the interesting exhibit of Mr. Davidson of 140, Great Portland-street, London, W. Here was shown a unique series of 20 artificial eyes illustrating various external diseases of the eye. A description of these models was given in THE LANCET of July 29th, 1899, p. 285. Mr. Davidson also explained the working of his simple double optometer for testing sight, and the complete sight test which was described in our columns some time ago.

THE SIXTH INTERNATIONAL OTOLOGICAL CONGRESS.

WEDNESDAY, AUGUST 9TH.

AT the afternoon sitting Professor POLITZER (Vienna) occupied the chair. The proceedings were mainly taken up with demonstrations in the theatre and in the museum.

Dr. ARTHUR HARTMANN (Berlin) gave a lantern slide demonstration of the Anatomy of the Frontal Sinus and the Anterior Ethmoidal Cells. He gave the results of his investigations into the complicated and various forms of the frontal sinus and anterior ethmoidal cells. The latter he preferred to call "frontal cells." He pointed out that the various arrangements of cells could be traced to a common embryological basis and the bearing of this upon the operation treatment of the frontal sinus. In the fœtus, Dr. Hartmann was understood to say, the modification of the surface of the outer wall of the nose began with the formation of several furrows, which eventually became the meatuses, the ridges which separated the furrows becoming the conchæ or turbinated bodies. The furrows had a knee-like bend, so that a ramus ascendens and a ramus descendens might be distinguished. In the ramus ascendens of the first furrow developed an excavation, the recessus frontalis, and out of this by an extension forward between the tables of the frontal bone the frontal sinus was developed. On the lateral wall of the recessus frontalis there were three secondary furrows and out of these, in a manner similar to the frontal sinus, developed three cells—the anterior ethmoidal or frontal cells. The many variations in the extensions of these cells gave rise to the various forms of the ductus naso-frontalis. The frontal sinus might be formed not only by the pushing forward of the recessus frontalis between the tables of the frontal bone, but also by the pushing forward of a frontal cell (indirect formation of the frontal sinus). The lantern slides showed: (1) the frontal sinus without frontal cells, (*a*) with a free opening to the middle meatus and (*b*) with an opening narrowed by a bulla ethmoidalis; (2) the frontal sinus with frontal cells from which was formed a naso-frontal canal, (*a*) with regular arrangement of the cells and (*b*) with irregular arrangement of the cells; (3) a hernia-like formation of the frontal sinus; and (4) absence of the frontal sinus. Other slides showed frontal sections through the ethmoidal cells and the method of operating. Dr. Hartmann considered that it was not sufficient to remove the floor of the frontal sinus but that the floor of the frontal cells must also be removed in order to obtain a free communication between the frontal sinus and the nose. For this reason he made an opening into the frontal sinus and another into the frontal cells through the inner wall of the orbit and removed with forceps the walls of the frontal cells.

THURSDAY, AUGUST 10TH.

Professor GRAZZI (Florence) took the chair at the morning sitting.

Mr. ARTHUR H. CHEATLE (London) read a paper on the Anatomy and Pathological Importance of the Petro-squamosal Sinus. The paper was accompanied by a lantern demonstration of photographs of specimens. The preparations themselves were exhibited in the museum amongst the specimens dealing with the anatomy of the ear. In his opening remarks Mr. Cheatle referred to the fact that little or nothing was written in even the best works on otology concerning that sinus which had most important connexions with the middle-ear both from an anatomical and a pathological standpoint. He first discussed the comparative anatomy and by means of lantern photographs demonstrated that in some lower animals—in the dog and calf, for instance—the sinus ran across the roof of the middle-ear, making its exit by means of a large foramen between the base of the zygoma and the bony meatal wall, and served almost entirely for the exit of the intracranial blood, taking the place, in fact, of the sigmoid portion of the lateral sinus. In the higher forms of monkey, such as the chimpanzee, gorilla, and orang-outang, the sinus closely resembled that in the human being. In the macacus group the young often had the groove which ran along the petro-squamosal suture and the anterior external opening was well marked, while in the adult the opening was usually closed or rudimentary, leaving the groove which ran forward to the foramen spinosum. In other varieties both the groove and the external opening were well marked, the latter piercing the bone between the large post-glenoid tubercle and the bony meatus. Mr. Cheatle next considered the human anatomy and said that in early fœtal life, before the formation of the internal jugular vein, the petro-squamosal sinus carried all the intracranial venous blood, emerging in front to open into the primitive jugular, afterwards the external jugular, vein. It was not to be wondered at then that the channel which served such important duties in early fœtal life should persist in some form or another in later life. The anterior opening usually closed, the sinus or its remains at its anterior extremity forming a connexion with the middle meningeal vein. The sinus dwindled to a small size, whilst the opening into the lateral sinus often persisted. With regard to the persistence of the anterior opening in front of

the meatus in adult life Mr. Cheatle said that he had examined 2585 skulls in the Museum of the Royal College of Surgeons of England and had found rudimentary remains in 23—three in the glenoid cavity, three in the zygomatic process itself, six in the base of the zygoma, and 11 just external to the Glaserian fissure with sometimes a fine groove running outwards and occasionally bridged over by the junction of the post-glenoid tubercle with the bony meatus. It was the rule rather than the exception for remains of the sinus to be present in some form or another all through life. In infancy and childhood the sinus as a rule was well marked, opening into the lateral sinus behind by means of a valve-like opening and in front joining the middle meningeal vein, while in adult life, although it was often marked, careful search had sometimes to be made. The absence of markings on the bone in the neighbourhood of the suture did not by any means show that the sinus was not present. In infancy and early childhood in the region of the posterior extremity of the suture numerous irregularities were often seen; it was at this spot that a bridge often formed over the posterior end of the sinus before it opened into the lateral sinus, a common condition in the adult bone. On looking at the roof of the middle-ear in a fresh specimen after the dura mater has been stripped off a network of rather large veins can be plainly seen immediately beneath the bone; from this network several veins emerge through the suture to empty into the sinus. In children in whom the interval between the suture was wide these were sometimes numerous, especially posteriorly. In the adult a fairly constant one was present on a vertical level with the membrane or might be present at intervals. These emerging veins received a fine covering representing the meninges. It was therefore seen, Mr. Cheatle said, that there was a connexion between the veins of the middle-ear and those of the meninges and occasionally, at all events, with those of the temporo-sphenoidal lobe, and through the meningeal coverings the middle-ear was in communication with those of the middle and posterior fossæ. Under those circumstances the importance of this sinus with its tributaries and connexions from a pathological point of view was very evident and it explained how infection might spread from the middle-ear to the meninges and brain without macroscopical evidence of the connexion. Such a state of things was not uncommon in infants and children in whom this pathway was well marked and in whom the membrane might be intact. It was astonishing in the face of this close connexion of the middle-ear with the meninges that meningitis was not of more frequent occurrence. This pathway would also explain the presence of a cerebral abscess without macroscopical connexion with the diseased middle-ear. It might be that they had there one of the pathways which would solve some of the unaccountable intracranial affections met with by the physician, such as the posterior basic meningitis of infants, cerebro-spinal meningitis, and perhaps some cases of tuberculous meningitis.

Dr. MALHERBE (Paris) read a paper on the Surgical Treatment of Dry Chronic Middle-ear Otitis by Scooping out the Petro-mastoid Bone With and Without Intubation. He claimed that the mode of operating which he had suggested and described was the only one which allowed free access to the structures in the cavity of the tympanum and to the pneumatic appendices of the middle-ear. Benefit would follow from the operation if the labyrinth was not yet affected; the results of the operation were entirely governed by the state of the lesions of that part. A careful and methodical examination of the various parts of the auditory apparatus and of their function was indispensable. The aerial perception of the deep-toned fork should not be reduced too low if it was hoped to have an entirely satisfactory result. The duration of the osseous conduction of the sound of the deep-toned fork ought to be as long as possible and nearly equal to the duration of the atmospheric perception of the same sound by a healthy ear. The diminution and, above all, the abolition of atmospheric perception of the sounds of the high-toned fork were extremely grave and unfavourable signs. Both ears should not be operated upon at the same time. Unless there was some contra-indication the surgeon should commence with the deafer ear and that most troubled by subjective noises. Before giving a description of the operation Dr. Malherbe explained a modification in the technique which he had recently adopted and which in some cases had given results far superior to those which he had hitherto obtained. In order to re-establish the balance of intra-tympanic pressure which was often destroyed and to enlarge the air space he provided, after clearing out the bone, a communication between the tympano-mastoid cavities and the external air by means of a small U-shaped celluloid tube of about the size of a No. 15 (No. 9 English) catheter. This tube was first rendered aseptic and then one end was placed in the antrum, and owing to its shape the concavity of the tube rested on the anterior border of the mastoid process. The other end, which had its convex side levelled, entered the external auditory canal through an opening made in its posterior wall at the junction of the cartilaginous with the bony portion. The different stages of the operation were: the retro-auricular incision, displacement of the auricle and meatus, and peeling off the periosteum; checking the hæmorrhage and making the opening in the posterior wall of the meatus; clearing out the bone with a gouge and mallet and opening freely into the tympanum; restoring movement to the ossicles and freeing the tympanic cavity from bands and adhesions; and, lastly, the tube and gauze were placed in position, the wound completely closed, the auricle sutured in position, and the dressing applied. The sutures were removed on the eighth day and by the tenth day healing was completed. The resulting improvement in hearing would be most marked for sounds of a high pitch. Subjective sounds due to a lesion of the transmitting apparatus and to an increase of intra-tympanic pressure disappeared or gradually diminished after the operation. As the tube established a permanent communication between the tympano-mastoid cavities and the external air intra-auricular pressure was regulated and for the same reason sonorous vibrations were also augmented. Scooping out the petro-mastoid with the employment of the tube was indicated in all cases where there was a diminution and narrowing of the spaces of the middle-ear such as occurred in sclerosing lesions and condensing osteitis. It completely provided for the pneumatic functions of the ear. The aseptic celluloid U-shaped tube gave no trouble: it was invisible and it caused neither pain nor discomfort. The benefit secured by the operation continued permanently.

FRIDAY, AUGUST 11TH.

On Friday morning Professor POLITZER (Vienna) read a paper on the Extraction of the Stapes, with demonstrations of histological preparations. The simple mobilisation of the stapes, he said, had only a temporary effect on the hearing. Where the improvement was more lasting it was due to a tearing of the adhesions. The extraction of the stapes in cases of sclerosis of the middle-ear was of no use, because the fixation of the stapes was due to a proliferation of bony tissue of the labyrinth which after removal of the stapes closed up the fenestra ovalis. The results of extraction in cases of non-suppurative middle-ear catarrh were too few upon which to base an opinion. In cases of chronic middle-ear suppuration they had a good number of observations. He was opposed to the performance of this operation during the course of chronic suppuration of the middle-ear. There was the possibility of the inflammation spreading into the labyrinth. But when the suppuration had passed and there were adhesions between the stapes and the niche of the fenestra ovalis he thought that extraction of the stapes might be performed with a view to improving the hearing.

In the afternoon, when the closing meeting of the Congress was held, the PRESIDENT, who occupied the chair, expressed his pleasure at being able to announce that an invitation had been received from France and that the next meeting would be held in the city of Bordeaux. The following were elected to form the new International Organisation Committee, with Dr. Moure of Bordeaux as President-elect. America: Clarence Blake and Orne Greene (Boston), Dench, St. John Roosa, and Knapp (New York), Goldstein (Cincinnati), Bryan (Washington), Randall (Philadelphia), Holmes and Pierce (Chicago), Daly (Pittsburg), Barkan (San Francisco), and Roaldès (New Orleans). Austria-Hungary: Politzer and Pollak (Vienna), Morpurgo (Trieste), Habermann (Graz), Böke and Szenes (Budapest), and Zaufal (Prague). Belgium: Delstanche, Capart, Huguet, Goris, and Cooseman (Brussels), Delie (Ypres), Schiffers (Liège), and Eeman (Ghent). Denmark: Schmiegelow and Holger Mygind (Copenhagen). France: Chatellier, De la Charrière, Gellé, Ménière, Baratoux, Luc, Castex, Lermoyez, Lubet-Barbon, Loewenberg, and Gougenheim (Paris), Moure (Bordeaux), Noquet (Lille), and Lannois (Lyons) (with power to add to the number). Germany: Stacke (Erfurt), Passow (Heidelberg),

Körner (Rostock), Röpke (Solingen), Kirchner (Würzburg), Brieger (Breslau), Lucae, Hartmann, and Jansen (Berlin), Bezold (Munich), and Kümmel (Breslau). Holland: Guye, Zwaardemaker, and Posthumous Meyjes (Amsterdam), Moll (Arnheim), and Van Anrooij (Rotterdam). Italy: Grazzi (Florence), Avoledo (Milan), Bobone (San Remo), Brunetti and Puteili (Venice), Secchi (Bologna), Faraci (Palermo), Chincini, De Rossi, and Ferreri (Rome), Cozzolino (Naples), Gradenigo (Turin), Masini and Poli (Genoa). Russia and Poland: Benni and Heimann (Warsaw), Orloff (Kief), Pietkowski (Lublin), Stepanoff, von Stein, and Scost (Moscow). Spain: Sune-y-Molist, Botey, and Verdós (Barcelona), Sotâ-y-Lasbia (Seville), Gonzalez Alvarez and Urunela (Madrid), Moresco (Cadiz), and Casanova (Valencia). Norway and Sweden: Uchermann and Horbye (Christiana), and Ceterblad and Lagerlöf (Stockholm). Switzerland: Secretan (Lausanne), Rohrer (Zürich), and Schwendt and Siebenmann (Basle). British Empire: Arthur Cheatle, Cumberbatch, Dalby, Field, Dundas Grant, Hill, Jobson Horne, Macnaughton Jones, Law, Urban Pritchard, and StClair Thomson (London), Cresswell Baber (Brighton), Milligan (Manchester), Bronner (Bradford), Paterson (Cardiff), Stone (Liverpool), McBride (Edinburgh), Barr (Glasgow), Sandford (Cork), Fitzgerald (Dublin), Barrett (Melbourne), and Birkett (Montreal).

The PRESIDENT announced that the Lenval Prize, founded by Baron Lenval, had been awarded to Dr. Charles Delstanche of Brussels for instruments designed for operations on the middle-ear.

The PRESIDENT, in his closing speech, expressed his indebtedness to all those who had assisted in organising and promoting the Congress. He referred to the work done by the secretary-general, Dr. Cresswell Baber, by the chairman and secretaries of the sub-committees, and by the treasurer, Mr. Cumberbatch, and to the kind hospitality of Mr. Field. The Museum Committee, he said, under their enthusiastic chairman, Mr. Ballance, had worked with a will and no two more so than Mr. Cheatle and Dr. Jobson Horne. The results had been worthy of the labour. In conclusion he thanked all the members of the Congress who really formed the foundation layer of its success.

Professor GRAZZI (Florence), in a brief address, expressed the thanks and gratitude of the members of the Congress to Dr. Urban Pritchard, under whose presidency that meeting had been crowned with so much success.

Dr. BENNI (Warsaw), in the name of the foreign members, proposed a vote of thanks to the Organisation Committee, to which Dr. CRESSWELL BABER replied and expressed a hope that the results would be an encouragement for the future study of otology.

Professor POLITZER referred to the museum as the outstanding feature of the Congress. He doubted whether it would be possible to see such a magnificent and well-organised one again. He expressed the thanks of the Congress to Mr. Cheatle and Dr. Jobson Horne for their incessant and indefatigable labours, which had so materially helped to render that Congress such a great success.

Mr. CHEATLE thanked Professor Politzer for his kind expressions.

THE MUSEUM.

Organisation has been the secret of the success of the International Congress and nowhere was it more successfully employed than in the formation of the museum which has so deeply impressed the large number of foreign otologists who attended the meeting. It is impossible not to be struck by the exacting amount of forethought and attention to detail the bringing together, arranging, and subsequently returning so vast and fragile a collection must have involved. In the absence of a method carefully preconceived the mobilising of this collection and the compiling of the descriptive catalogue in a short space of time could never have been carried out. Through cordial coöperation from abroad the museum has disclosed the work and progress of the science in all countries, some countries, Germany and Holland, contributing through their otological societies. The museum was arranged in the large rooms on the first-floor of the Examination Hall, Victoria Embankment.

The British Section which contained upwards of 2000 exhibits and preparations occupied the central room. The Royal College of Surgeons of England was a very large contributor to the section and did honour to the memory of Joseph Toynbee by lending his collection entire. All the hospitals in London had allowed their museums to be drawn upon and so had the hospitals in the provinces possessing specimens of special interest. Several interesting specimens came from the private collections of Mr. H. A. Ballance (Norwich), Dr. Barr (Glasgow), Mr. Arthur H. Cheatle (London), Mr. Hugh Jones (Liverpool), Mr. R. Lake (London), and Mr. Secker Walker (Leeds). It would be difficult to overrate the value of the system adopted in the arrangement of the specimens in the British Section. The section was divided up into sub-sections of Comparative Anatomy, Embryology, Anatomy, Injuries, Malformations, and Diseases of the Ear, Nose, and Naso-pharynx—the morbid specimens being grouped in pathological order. The decided advantage this arrangement has over that usually followed in museums of the kind of grouping specimens as separate collections was apparent at a glance. The scientific value of the museum was materially increased and comparative study was greatly facilitated. The precedent that has been established might usefully be followed on future occasions.

Passing to the sub-sections, the Comparative Anatomy of the Auditory and Olfactory Organs was well demonstrated by a collection from the Royal College of Surgeons of England; the preparations by Professor Charles Stewart of the membranous labyrinth in the lower animals attracted considerable attention. The Alban Doran collection of ossicles was also much studied. Dr. Urban Pritchard lent microphotographs of his well-known sections of the cochlea and vestibule in birds and mammals. The museum was rich in anatomical preparations of the Ear and Nose. An opportunity was afforded of studying the anatomy of the temporal bone from the fifth month of fœtal life, through childhood, and up to adult life in a series of dissected preparations which will probably not be seen together again. The best of the anatomical preparations of the temporal bone, excepting those of Professor Partridge from King's College dealing with the adult bone, were supplied from private sources. Mr. Cheatle exhibited from his private collection a complete set from fœtal to adult life. The anatomy of the nose was dealt with in a way similar to that of the ear.

Amongst the specimens illustrating Injuries were some very interesting fractures passing through the temporal bone; in two from Guy's Hospital the facial nerve had been exposed but uninjured. Injuries to the nose involving displacement of the nasal bones were well seen. Amongst the Malformations were two interesting preparations (Nos. 448 and 449) of the ears of a sheep and of a lamb showing the presence of teeth in supernumerary auricles. Specimen No. 465, a fœtal skull from St. Thomas's Hospital, showed malformation of the tympanic ring, membrane, and malleus associated with cleft palate and double harelip. No. 484 was a dermoid tumour of the naso-pharynx presented by Mr. Bland Sutton to the Royal College of Surgeons of England.

"Inflammation of the ear and its consequences" naturally formed a very large group in the sub-section of Pathology. Pages 64 to 105 in the catalogue are given up to this group. The consequences of inflammation of the middle-ear were classified according to the paths of extension the disease had taken. One specimen of exceptional rarity in this group was No. 695, shown by Dr. Jobson Horne, in which pus had tracked along the aqueductus vestibuli to the saccus endolymphaticus and converted the latter into an abscess sac, which had ruptured. Amongst the specific inflammations was a beautiful formalin preparation (No. 763), from St. Bartholomew's Hospital, of glanders. The museum was rich in epithelioma of the auricle, there being some 14 specimens. A sarcoma of the middle-ear (No. 827) came from St. George's Hospital and from the same hospital a melanotic sarcoma of the nose (No. 908). The Toynbee collection still holds its own as a monument of minute dissection, accurate observation, and careful description, and we are glad to see that the catalogue has been reproduced in its original form.

Passing to the foreign sections a large collection was received from Vienna through Professor Politzer who showed several of his beautiful anatomical and pathological preparations of the ear. Professor Joseph Gruber exhibited wax models of diseases and deformities of the auricle. Dr. Ferdinand Alt, Dr. Victor Hammerschlag, and Dr. Gustav Alexander showed preparations and drawings of the internal ear. Dr. Delstanche of Brussels sent models of instruments designed for operative treatment of the ear and nose. The German Section, through the services of Dr. Arthur

Hartmann, contained several exhibits. The section was distinguished by the methods shown for studying the structures of the ear. Dr. Katz (Berlin) demonstrated how stereoscopy can be used in studying the minute anatomy of the ear. Contributions were also received from France, Norway, Holland, Italy, and Switzerland.

The catalogue has been compiled and edited by Dr. Jobson Horne and Mr. Arthur H. Cheatle, secretary to the Museum Committee. The advance proof used in the museum is now undergoing revision and is by no means of the dry-as-dust kind that the nature of the contents might suggest. It contains a great deal of interesting clinical matter and as a work of reference it has a distinct value.

THIRD INTERNATIONAL CONGRESS OF GYNÆCOLOGY AND OBSTETRICS AT AMSTERDAM.

FRIDAY, AUGUST 11TH.

THE following papers were read:—

Dr. DELAGENIÈRE (Le Mans): Total Hysterectomy in Cases of Fibromata complicated by Albuminuria.

Dr. GOUILLOUD (Lyons): Forcipressure of the Uterine Arteries in Fibromata.

Mr. BOWREMAN JESSETT (London): On the Treatment of Uterine Myoma.

Dr. ROBERT BELL (Glasgow): Medical Treatment of Fibromyoma and Ovarian Disease and of Incipient Carcinoma of the Cervix.

Dr. WOSKRESENSKY (Kieff): The Principles of Treatment of Uterine Myoma.

Dr. D'HOTMAN DE VILLIERS (Paris): A Case of Total Abdomino-Vaginal Hysterectomy for a Large Fibroma.

Dr. DOLÉRIS (Paris): The Treatment of Fibromata with Pregnancy.—The paper was discussed by Dr. GALVANI, Dr. GUTIERREZ, Dr. ENGSTRÖM, Dr. LA TORRE, and Dr. SOLOVIEFF.

Dr. DURET (Lille): Certain Special Operative Procedures in the Treatment of Fibromata.

Dr. GUTIERREZ (Madrid): The Surgical Treatment of Myomata.

Dr. FARGAS (Barcelona): The Surgical Treatment of Myomata.

Dr. TREUB (Amsterdam): Statistics of his Results of Operations for Fibroma during the Last Three Years.

Dr. SCHMELTZ (Nice): A New Procedure for Abdominal Hysterectomy.

In the afternoon the question for discussion was the Surgical Treatment of Fibro-Myomata. The discussion was opened by Dr. DOYEN (Paris) who pointed out that uterine fibroids were far from being a benign affection, for besides the more frequent accidents, such as hæmorrhage and pressure symptoms, grave complications were apt to supervene, the most important of these being phlebitis, albuminuria, intestinal obstruction, and malignant degeneration. 1. Phlebitis in these cases was of infective origin, the starting-point of the infection being the uterine cavity. 2. Albuminuria might occur without either the volume of the tumour or the tension on the abdominal walls appearing to be responsible; it was found not only with incarcerated fibroids but also with those that were mobile and even with pedunculated tumours. Albuminuria was therefore not a contra-indication to operation; on the contrary, it was often one of the most urgent of indications. The same might be said of serious hæmorrhage leading to marked anæmia; removal of the tumour and ligature of the uterine arteries formed the best means of hæmostasis. 3. Intestinal obstruction was sometimes the direct result of pressure but in most cases it was due to fibrous bands and adhesions behind the uterus. Dr. Doyen had known these to occur in several instances as the result of so-called "palliative" methods, such as electricity and interstitial injections of ergotin. 4. Malignant degeneration might take the form either of sarcomatous change in the myoma itself or of epithelioma of the cavity of the cervix of the mucosa of the body of the uterus. The fact of the existence of a myoma was not necessarily an indication for operation; if the size of the tumour remained stationary the patient should be kept under observation and examined three or four times a year. But if it were increasing in size and inducing the complications above mentioned operation became a necessity. The discussion should be framed with a view to the general adoption of a well-determined line of treatment and of a precise operative technique. He sought to demonstrate that his procedure of vaginal hysterectomy without preventive hæmostasis by anterior hemisection, on the one hand, and his procedure of total abdominal hysterectomy by subserous decortication of the inferior segment of the uterus on the other hand, constituted the two most important advances in the surgery of fibro-myomata within recent years. He contended that his technique was so simple as to admit of no further improvement of any importance and so sure as to almost entirely suppress every risk of the operation; that it was applicable, with slight modifications of detail, to every case without exception; and that it was within the reach of all surgeons. Dr. Doyen then passed under brief review the various historical steps in the evolution of hysterectomy—viz.: (1) vaginal myomectomy with conservation of the uterus (Amussat, 1840); (2) removal of pedunculated fibromata by laparotomy (Atlee, 1844); (3) supra-vaginal amputation of the fibroid uterus (Kimball, 1855; Koeberlé, 1863); (4) removal of ovaries and tubes by laparotomy (Trenholm-Hegar, 1876); (5) abdominal myomectomy with conservation of the uterus (Martin, 1878); (6) vaginal hysterectomy (Kottmann, 1881; Péan, 1882); (7) revival of Amussat's vaginal morcellation (Péan, 1884-1886); (8) application of morcellement to the vaginal ablation of the fibromatous uterus (Péan, 1886-1889); (9) abdomino-vaginal hysterectomy (Péan, 1886); (10) abdominal hysterectomy, with serial ligature of the broad ligaments (Martin, 1889); (11) vaginal hysterectomy by anterior hemisection of the uterus without preventive hæmostasis; hysterotomy by simple or V-shaped anterior hemisection, with conservation of the uterus (Doyen, 1887); and (12) total abdominal hysterectomy by subserous decortication of the inferior segment of the uterus (Doyen, 1891). With regard to operative procedures, the operations for the removal of fibro-myomata were considered under two main divisions:—(1) operations through the vagina; and (2) operations by abdominal section. Each of these divisions comprised three sub-divisions: (1) removal of pedunculated fibroids; (2) enucleation of interstitial myomata, with preservation of the uterus; and (3) total removal of the fibromatous uterus. 1. Vaginal operations.—(1) Removal of pedunculated fibroids (fibroid polypi); and (2) enucleation of interstitial myomata. Both these procedures were briefly described; in either case a large myoma was treated by morcellement prior to removal. Dr. Doyen pointed out that in the case of enucleation the chief danger to be guarded against was perforation of the uterus. (3) Vaginal hysterectomy. Dr. Doyen's procedure was described as taking place in the following stages. First stage: incision of the posterior fornix, opening of Douglas's pouch, and exploration of the pelvic cavity. Second stage: incision of the anterior fornix and separation of the bladder. Third stage: crushing of the lower and middle parts of the broad ligaments. For this purpose the *écraseur* was applied on each side for from 15 to 20 seconds. The uterus could then be easily drawn down. Fourth stage: anterior hemisection of the uterus, either by median or by V-shaped incision, and drawing down of the uterine fundus. For a small uterus the median incision sufficed to allow the fundus and the adnexa to be brought down; for a larger tumour the V-shaped incision was employed. Fifth stage: application of a pressure forceps on each broad ligament and separation of the uterus. Sixth stage: crushing of the upper border of the broad ligaments and application of ligatures. After the application of the *écraseur* for from 15 to 20 seconds above the pressure forceps a silk thread was tied in the groove formed by the *écraseur*. The use of this instrument ensured that the pedicle was relatively thin. As the threads were gradually tightened the assistant cautiously removed the pressure forceps. A single thread thus embraced each broad ligament. Seventh stage: peritoneal toilette, co-aptation of the peritoneal flaps, and tamponnade of the vagina. The modifications necessitated by various complications were described in detail. 2. Abdominal operations.—The operation of choice was total abdominal hysterectomy, with subserous enucleation (*décortication*) of the inferior segment of the uterus. This comprised the following stages. First stage: abdominal incision and raising of the tumour out of the pelvis. Second stage: when Douglas's pouch was free an assistant caused

to project under the peritoneum a long curved forceps, placed in the vagina before the operation, and cutting down on this the vagina was opened; the cervix was seized and drawn backwards and upwards. Third stage: the cervix was separated from the bladder by opening the anterior vaginal fornix from the vaginal side. Fourth stage: the right broad ligament was seized with forceps and divided on its uterine side; the tumour was then turned over and the left broad ligament was treated in a similar fashion. Fifth stage: hæmostasis. The pedicles of the adnexa were crushed, tied, and divided. The uterine arteries were also tied and the forceps were removed. As a rule no other ligatures were required. Sixth stage: a purse-string suture was carried from the retro-uterine peritoneum across the peritoneum of the right adnexa to the peritoneum between the right adnexa and the bladder. When this was tied it threw the stump of the right adnexa below the peritoneum. A similar suture shut off the stump of the left adnexa. A continuous suture carried from one side to the other approximated the retro-uterine peritoneum to that of the bladder. Seventh stage: the peritoneal cavity was dried with sterilised gauze compresses and the abdominal wound was closed in two layers, silk for the peritoneum and fascia, and horsehair for the skin.

Dr. BALDY (Philadelphia) said that the first stage in the treatment of fibroids was the removal of the tumour independently of the question as to what became of the uterus; the second stage represented an attempt to remove the tumour or relieve the symptoms without removing the uterus; this stage was illustrated by such procedures as oöphorectomy, curetting, and electrical treatment. The third and final stage comprised the two operations of myomectomy and hysterectomy. The choice in performing these operations lay between the vaginal and the abdominal routes. Of these Dr. Baldy preferred the abdominal plan.

Dr. DELAGENIÈRE (Le Mans) dwelt especially on the value of the ligature of the uterine arteries through the vagina in the treatment of myomata. By this means hæmorrhage was reduced and the volume of the tumour was rapidly diminished. When menstruation returned it was found to be much less abundant. This method had the advantage of being safe and efficacious and it in no wise compromised the performance of more radical operations if these appeared to be indicated.

Professor HECTOR TREUB (Amsterdam) said that for soft fibroids of medium size he generally began by injections of ergotin or by electricity. From this treatment he had found radical cure in some cases and symptomatic cure in others. His operation cases were 76 in number.

Dr. W. ALEXANDER (Liverpool) maintained that myomectomy was the operation of the future, for by this procedure the ideal was obtained—viz., that the diseased structure should be alone removed and the function of organs as far as possible preserved. He found it possible to remove a number of tumours through a single median incision of the uterus. He had done this operation now in a number of cases without a fatality.

Dr. CARSTENS (Detroit) dwelt on the importance of dealing with each case on its merits. In the case of a young woman who perhaps desired children he advocated greater risks and recommended myomectomy. In an old patient with lacerated cervix he would advise total hysterectomy, but in a nulliparous woman near the menopause where the cervix was clean and healthy he recommended supra-vaginal amputation of the uterus.

Dr. JACOBS (Brussels) thought that the trend of modern opinion was this, that in the absence of symptoms nothing should be done, and that if any procedure were required it should be a radical one. He advocated supra-vaginal hysterectomy in preference to total hysterectomy.

Dr. JONNESCO (Bucharest) expressed the view that the improvement of technique was the most important thing in the surgery of myomata, and among improvements of technique the most notable step was the giving up of mixed abdominal and vaginal procedures. He thought that vaginal operations had only a very limited application in the treatment of myomata. He did not approve of waiting till alarming symptoms were present before operating on fibromata; by operating early the best results were obtained. That was specially true in the case of fibromata in young women, where the growth was apt to develop very rapidly. Partial operations were very seldom indicated because, as a rule, they were inefficacious, and in the majority of cases total hysterectomy was the operation of choice. This should be done by the abdomen, since an easy abdominal extirpation was in every way better than a laborious vaginal one.

Dr. ARTHUR GILES (London) said that he did not regard the presence of a myoma as necessarily an indication for operation; but when interference was necessary he had little faith in palliative measures such as electricity and injections of ergotin, but thought it was better to proceed at once to the removal of the tumour by myomectomy or of the uterus and tumour by hysterectomy. To his mind, therefore, the indications in the majority of cases were quite definite; if there were no symptoms the case should be left alone but kept under observation; if there were symptoms of hæmorrhage, pressure, or degeneration of the tumour the treatment should be removal. The methods of operation comprised two main classes—vaginal and abdominal; in either case two procedures were possible—viz., removal of the tumour alone and removal of the uterus and tumour. In Dr. Giles's opinion partial operation should be restricted in the case of vaginal operations to removal of fibroid polypi and isolated interstitial tumours becoming polypoid, and in the case of abdominal operations to the removal of pedunculated tumours. Removal of small myomatous uteri might be done through the vagina, but as small uteri seldom gave rise to symptoms he thought that that operation would not be very often indicated. In his opinion the operation of choice was supra-vaginal amputation of the uterus.

Dr. HEINRICIUS (Helsingfors) described the method of hysterectomy which he advocated—viz., the supra-vaginal amputations of the uterus, leaving peritoneal flaps. The cervical canal should be disinfected by means of the thermo-cautery. The peritoneal flaps were then united over the stump. His results had been satisfactory, the mortality being 3 per cent.

Dr. PESTALOZZA (Florence) thought that there were very few cases in which fibroids gave rise to no symptoms, especially in young and unmarried women; consequently most of these cases required operation. He had performed altogether 102 operations, of which 99 were by the abdomen and only three by the vagina. His preference was therefore evident. Of the 99 cases he had had only three which were fatal. Many of the earlier cases were done by the method of total hysterectomy, but among the later ones there was a large proportion of cases of supra-vaginal amputation of the uterus.

A paper was read for Professor FREDERIC SCHAUTA (Vienna), who was unable to be present, on the Surgical Treatment of Fibro-Myoma. Professor Schauta's personal experience was founded on 424 cases of operative treatment of myoma uteri with opening of the peritoneum. As to general indications, he held that tumours were only to be treated surgically in cases where all other treatment had failed. When they merely existed without causing pain or other symptoms it was not justifiable to operate. The palliative operations were curettage and castration. They were generally to be set aside as inefficient and very often dangerous and should be reserved for very small intramural tumours. Vaginal operations.—The removal of pedunculated sub-mucous tumours could be effected through the dilated cervical canal. For broad-based sub-mucous myomata it was necessary to dilate and sometimes to cut open the cervix. Enucleation was only indicated when part of the tumour was born. The operation must on no account last more than one séance on account of the danger arising from possible asepsis or gangrene. Abdominal operations.—Four procedures required consideration. 1. Abdominal enucleation for the removal of pedunculated myomata. This was called for only in cases of isolated tumours not larger than a man's fist; the indication was therefore rare. Professor Schauta performed enucleation 25 times, with five deaths, of which three occurred from embolism and pneumonia. 2. Supra-vaginal amputation; extra-peritoneal treatment of the pedicle.—Professor Schauta was formerly a partisan of that operation, but now practised it only on exceptional or urgent cases. He had done 78 such cases with 13 deaths, four of which were from causes apart from the operation. 3. Intra-peritoneal treatment of the pedicle.—Professor Schauta had done this operation only three times, twice with fatal results. He admitted the primary advantages of the method, but considered the frequent occurrence of exudation and the possibility of malignant degeneration of the stump

of far too great importance to be overlooked and therefore sought for a better method. 4. Abdominal total extirpation.—The only objection to that method was its difficult technique and a slightly higher rate of mortality than with the extra-peritoneal method. He obtained the following results: out of 106 operations there were 12 deaths—i.e., 15 per cent.; only 10 of that number, however, were the direct result of the operation. Professor Schauta's technique was as follows. After eventration of the tumour the broad ligaments were secured on either side by forceps, two on each side; he then made the incision of the serosa and detached the bladder as far as the insertion of the vagina; the parametria were clamped quite near the uterus and the incision of the uterus was made. Two clamps were also placed right and left of the lateral vaginal pouches and the vagina was opened right and left. The tumour was now held by a narrow bridge formed by the anterior and posterior vaginal walls. This bridge being similarly secured by two curved clamps the uterus was severed. For the clamps were now substituted ligatures, which were not cut short, to be used for drainage, and finally the peritoneum of the bladder was united with that of the posterior vaginal wall.

Mr. F. BOWREMAN JESSETT said that they were all of one mind as to the practice which should be adopted for myomata of small size which gave rise to no trouble, no pain, no hæmorrhage, and no symptoms of compression. These undoubtedly should not be interfered with by operative procedures, but at the same time the patients should be kept under observation, and if at any time the tumours should be seen to be increasing in size or hæmorrhage occurring then they should at once be removed. The question of which operation should be performed would appear to lie between myomectomy, the sub-peritoneal operation, or total extirpation either by the abdomen, the vagina, or by the combined abdomino-vaginal route. Personally, the speaker preferred the operation for total extirpation, but in cases in which the patient was in an enfeebled condition or the cervix was much elongated then he would suggest the sub-peritoneal operation.

Dr. JAPP SINCLAIR (Manchester) contended that there was no one operation suitable for all cases; but in most cases he thought that the operation of choice among abdominal procedures was supra-vaginal amputation of the uterus. In contra-distinction to several previous speakers he advocated the operation through the vagina whenever this was possible.

Dr. GORDON (Portland) strongly advocated the removal of the uterus whenever it was found to be affected with myoma.

SATURDAY, AUGUST 12TH.

At the morning sitting the following papers were read:—

Dr. TREUB: Antisepsis in Symphysiotomy and Cæsarean Section.—The paper was discussed by Dr. PINARD and Dr. QUEIREL.

Dr. CHALEIX VIVIE (Bordeaux): The Innocuity of Anaplastic Amputation of the Cervix in Relation to Pregnancy and Labour.—The paper was discussed by Dr. PINARD, Dr. LA TORRE, and Dr. DURET.

Dr. RAPIN (Lausanne): On Insufflation of Air into the Uterus as a Means of Prevention of Fœtal Asphyxia.—The paper was discussed by Dr. PINARD and Dr. QUEIREL.

Dr. LA TORRE (Rome): The Classification of the Positions of the Fœtus.

Dr. QUEIREL (Marseilles): Urology of Pregnancy and the Puerperal State.—The paper was discussed by Dr. BUÉ, Dr. PINARD, and Dr. TREUB.

Dr. VAN DER VELDE (Amsterdam): The Elimination of Methylene Blue in Pregnancy.—The paper was discussed by Dr. PINARD and Dr. QUEIREL.

Dr. J. L. FAURE (Paris): Total Abdominal Hysterectomy for Cancer of the Uterus.

Dr. H. HARTMANN (Paris): On the Operative Treatment of Salpingitis.

Dr. LAROYENNE (Lyons): Treatment of Cystocele by a New Process of Cysto-hysteropexy.

Dr. JONNESCO (Bucharest): A New Method of Suture of the Abdominal Wall without Buried Sutures.—The paper was discussed by Dr. RICHELOT, Dr. SOLOVIEFF, and Dr. KRIEFFER.

Dr. H. BRODIER (Paris): On Periodic Intermenstrual Pain.

At the afternoon session the discussion on the Relative Indications of Cæsarean Section, Symphysiotomy, Craniotomy, and Premature Induction of Labour was introduced by Dr. PINARD and Dr. PESTALOZZA and continued by Dr. ARTHUR GILES, Dr. L. MEYER, Dr. COROMILAS, Dr. LA TORRE, Dr. ENGELMANN, Dr. NIJHOFF, Dr. HEINRICIUS, Dr. STEYN PARVÉ, Dr. TREUB, and Dr. DE REIN.

Dr. ARTHUR GILES (London) said that among different authorities the relative indications for these procedures varied within rather wide limits. His own view was summed up as follows: 1. True conjugate of from 100 to 85 millimetres: forceps, version, or premature labour. The nearer the lower limit was approached the stronger was the indication for premature labour. 2. Conjugate of from 85 to 70 millimetres: premature labour, symphysiotomy, or craniotomy. If elective, labour should be induced prematurely or wait till term for symphysiotomy. If at term symphysiotomy if the child were living and craniotomy if the child were dead. 3. Conjugate of from 70 to 55 millimetres: symphysiotomy, Cæsarean section, or craniotomy. If the child were small symphysiotomy was possible; if the child were large Cæsarean section was inevitable; and if the child were dead craniotomy was to be done. 4. Conjugate of from 55 to 40 millimetres: Cæsarean section was to be done whether the child were large or small, living or dead. The aim of all and the speaker's hope was that before long craniotomy of the living child would become a thing of the past. It was necessary that general practitioners should realise that symphysiotomy was quite within their province, so that if the patient were seen too late for the induction of premature labour the child might be saved. On three questions there was practical unanimity of opinion: (1) in extreme degrees of contraction the proper course was Cæsarean section; (2) in all cases craniotomy of the living child should be avoided if possible; and (3) for minor degrees of contraction forceps or version were best. The chief point at issue was the choice between symphysiotomy and premature labour; and his view was that if the patient were seen in time the latter was preferable in view of its much lower maternal mortality.

Dr. L. MEYER (Copenhagen) pointed out that premature labour stood in a category apart, since that necessitated seeing the patient early in pregnancy. When this was possible he thought that premature labour would give the best results, especially with improvements in technique. For this operation he preferred the use of the bags of Champetier de Ribes, the smaller sizes being best. With regard to craniotomy, while he maintained that it should be avoided whenever it was possible, he submitted that there must remain cases where it was inevitable, as, for instance, when the father and mother refused to consent to a serious operation. The question of choice between symphysiotomy and Cæsarean section must be modified to some extent by the condition of dilatation of the os externum. It was to be remembered also that if the conjugata vera were seven centimetres symphysiotomy would at the best give an enlargement equal to 8·5 centimetres; now with a conjugata vera of 8·5 centimetres there might be a great deal of trouble. Consequently symphysiotomy in such cases might be followed by a very troublesome delivery and he would prefer Cæsarean section. The after-treatment also of symphysiotomy was much more difficult than that of Cæsarean section.

Dr. COROMILAS (Athens) made a few observations, after which

Dr. F. LA TORRE admitted with Professor Pinard that symphysiotomy was an excellent operation from the point of view of theory, but in practice it was almost impossible in many instances. There were cases in which symphysiotomy would not be allowed by the patient's friends, especially in outlying and ignorant districts. The mere proposal to operate might be attended with personal risk to the accoucheur. Professor Pinard apparently recognised nothing but symphysiotomy, but if the poor accoucheur could not do this operation in any given case, what was he do? Was he to let the patient die? Symphysiotomy was actually practised by very few at the present time, and he maintained that, however admirable it was in principle, they must admit also the procedures of premature induction of labour and even of craniotomy.

Dr. ENGELMANN thought that in some places there was a tendency among skilled operators to resort to Cæsarean section much too freely. This caused symphysiotomy to be unduly neglected. It would be found that taking it all

round the results of symphysiotomy were much better than those of Cæsarean section; and this was especially the case in the hands of general practitioners. As a matter of fact, the earliest successful symphysiotomies were performed by general practitioners in country districts and not in towns or hospitals. The choice between symphysiotomy and craniotomy should always be given to the former. He hoped to see craniotomy of the living child abolished, both because of its moral aspects and also because of its maternal mortality, which was considerable. In England statistics of craniotomy showed a mortality of 7 per cent.

After some observations by Dr. MIJHOFF (Groningen), Dr. HEINRICIUS (Helsingfors), and Dr. STEYN PARVÉ (Hague), Dr. TREUB said that he shared the views of Leopold rather than those of Pinard. Pinard had said, "the physician must never kill." The principle was excellent, but not always practical. Symphysiotomy was a procedure which endangered the life of the mother without assuring the safety of the child. Consequently, even in hospitals, but especially in town practice, craniotomy must still be admitted as a necessity, however revolting the operation might be.

Obituary.

FRANCIS EDWARD HICKS, F.R.C.S. ENG.

MR. HICKS, who died last week at Lingmead, Buntingford, Herts, was one of the oldest Members of the Royal College of Surgeons of England, having taken his diploma so far back as 1832. He studied at St. George's Hospital and was house surgeon there in 1834. In 1852 he became F.R.C.S. Eng. by election. Mr. Hicks practised at No. 7, Henrietta-street, Cavendish-square, W., from 1840 to 1870, having succeeded to the practice of his father, the late Mr. Samuel Hicks, who had carried it on at the same address for many years previously and who died at the age of 94 years. Mr. Hicks's professional engagements left him no leisure for literary work and he retired from practice in 1876, since when he has resided at Buntingford. He occupied his retirement in agricultural pursuits, of which he was very fond; he was a great lover of horses, riding with the Puckeridge Hounds up to about 10 years ago. He died on August 14th in his ninetieth year and is buried at Wyddiall, where he was born in 1810.

GEORGE BURN, M.D. EDIN., J.P.

DR. BURN of Lybster, Caithness, died on July 31st in Edinburgh, where he had been staying for a few days and had had an operation performed. He was born in Edinburgh, his father being a merchant and town councillor there, and after studying at the University he graduated as M.D. in 1850. Soon afterwards he went north to Caithness and practised in the parish of Latheron for nearly half a century, making many friends and earning the gratitude of numerous patients. In January, 1891, he was entertained at a banquet at Lybster and was presented with a silver candelabrum. Dr. Burn was a justice of peace for Caithness and held the appointments of parochial medical officer of Latheron and medical officer of the Wick and Latheron combination poor-house. The parish of Latheron extends about 27 miles in length and from 10 to 15 miles in breadth, over the whole of which wide area he visited his patients until a few years ago, when an assistant undertook the work at one end of the parish. For many years the deceased combined farming with medical practice, having had at least three farms at one time or another. Dr. Burn was twice married and leaves a widow and grown-up family. The funeral, which took place at Latheron churchyard, was largely attended and was marked by many tokens of the esteem in which he was held.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Mancebo, Professor of Histology in Rio de Janeiro.—Dr. Hermann Klotz, Extraordinary Professor of Gynæcology in the University of Innsbruck.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In August the following candidates passed in the subjects indicated:—

Surgery.—F. H. Allen, Manchester; E. R. Bastard, St. Bartholomew's Hospital; J. T. Davies (Sections I. and II.), Michigan and Westminster Hospital; T. S. Elliot (Section II.), London Hospital; T. H. Fox, Leeds; H. Herbert, London Hospital; H. R. Miller, Guy's Hospital; E. S. Pushong, Calcutta; R. G. W. Saint Cedd, Guy's Hospital; and A. F. Weston (Section II.), St. George's Hospital.

Medicine.—F. H. Allen, Manchester; J. R. Bentley (Sections I. and II.), Middlesex Hospital; N. H. Bonnerjee (Sections I. and II.), Royal Free Hospital; C. E. Brooks and J. Brown, Manchester; T. S. Elliot (Section II.), London Hospital; D. Hamilton, Royal Free Hospital; W. J. H. Hepworth, London Hospital; and E. Tyson and E. D. Wortley (Section II.), St. Bartholomew's Hospital.

Forensic Medicine.—F. H. Allen, Manchester; J. R. Bentley, Middlesex Hospital; N. H. Bonnerjee, Royal Free Hospital; C. E. Brooks and J. Brown, Manchester; J. T. Davies, Michigan and Westminster Hospital; W. J. H. Hepworth, London Hospital; and E. Tyson, St. Bartholomew's Hospital.

Midwifery.—F. H. Allen, Manchester; A. St. J. Bateman, King's College Hospital; N. H. Bonnerjee, Royal Free Hospital; J. T. Davies, Michigan and Westminster Hospital; C. J. Marsh, University College Hospital; R. G. W. Saint Cedd, Guy's Hospital; and E. Tyson, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise Medicine, Surgery, and Midwifery:—Messrs. F. H. Allen, J. Brown, J. T. Davies, T. S. Elliot, T. H. Fox, H. Herbert, and R. G. W. Saint Cedd.

FOREIGN UNIVERSITY INTELLIGENCE. — *Athens:* Dr. Kallionzis has been appointed Professor of Operative Medicine and of Topographic Anatomy in succession to Dr. Paul Jean, deceased.—*Basle:* Dr. F. Müller of Marburg has been appointed Professor of Clinical Medicine.—*Innsbruck:* Dr. Karl Ipsen has been promoted to the Ordinary Professorship of Forensic Medicine.—*Marseilles:* Dr. Cousin of Lille has been appointed Professor of External Pathology and of Operative Medicine in succession to Dr. Chapplain, retired.—*Memphis:* Dr. Minor has been appointed to the chair of Physiology in place of Dr. Crofford, who has been transferred to that of Gynæcology. Dr. Sale has been appointed Professor of Materia Medica and Therapeutics.—*Rennes:* Dr. Follet has been appointed Professor of Clinical Medicine. Dr. Le Moniet has been appointed Professor of Clinical Surgery. Dr. Lenormand of Tours has been appointed Professor of Pharmacy.—*Strasburg:* The University of Strasburg, which has hitherto refused to admit female students, as all the other German universities do, has at last arranged to authorise its *docenten* to allow women whose general education is satisfactory to attend the classes.

LITERARY INTELLIGENCE.—The Funk and Wagnalls Company announce "The Funk and Wagnalls Standard Encyclopædia," which will be a companion work to "The Funk and Wagnalls Standard Dictionary." The same general principles that have made "The Standard Dictionary" so satisfactory will be followed in the making of this encyclopædia. Each class of subjects will be in charge of a recognised expert; in all, over 200 expert scholars will be engaged in the preparation of the work; all treatment of terms will be condensed to the last degree consistent with completeness and clearness and every available device will be used to make the work easy of consultation. The aim will be to make it accurate, simple, complete, to cover "things" as completely and satisfactorily as "The Standard Dictionary" covers "words," so that the two works will supplement each other and together make a most complete and convenient library for reference.

LIBEL ON A SURGEON. — At Cardiff on August 17th Mr. Ivor Ajax Lewis, surgeon to the Cymmer and Wattstown Collieries, obtained damages amounting to £75 against a grocer of Cymmer who last year during the coal strike had caused to be distributed a handbill which contained statements reflecting upon Mr. Lewis to the effect that he neglected and was

inattentive to his patients and suggesting that the colliers should give up the present system of payment to their surgeon of 3d. in the £ upon the wages earned. Although the authorship of the libel was well known last year no action was then taken, but when an attempt was made in July last to distribute copies of the handbill amongst a large gathering of miners it was decided to take proceedings at the Swansea Assizes where judgment went by default. Mr. Lewis has practised in the district for over 20 years and is a Justice of the Peace for Glamorgan.

VACCINATION GRANT.—Mr. D. W. Scott, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been awarded a grant for successful vaccination in the Llanbister District of the Knighton Union.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, E. W., M.B. Lond., has been appointed House Physician to the Northern Hospital, Liverpool.

BEST, P., L.S.A., M.R.C.S., L.R.C.P., has been appointed Medical Officer for the Third District, Penzance Union.

DOHERTY, J. D., M.D. Edin., has been appointed House Surgeon to the Northern Hospital, Liverpool.

FEGAN, JOHN F., L.R.C.S. Irel., L.A.H. Dub., has been appointed Medical Officer to the Oldcastle Dispensary.

JOHNS, A. T., M.B., B.S., M.D. Dub., has been appointed Medical Officer for the Cropredy District, Banbury Union.

KINSEY-MORGAN, A., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Royal Victoria Hospital, Bournemouth.

KNOWLES, Miss B., M.B., B.S. Lond., has been appointed Second Assistant Medical Officer at the Waterloo-road Workhouse, St. Matthew, Bethnal Green, vice Mr. G. Gatenby.

MEACHER, J. H., M.R.C.S., L.R.C.P., has been appointed Medical Officer for the Second District, Bodmin Union.

MOORE, S. C., M.B., Ch.B. Vict., has been appointed Assistant House Surgeon to the Northern Hospital, Liverpool.

OLD, J. E. S., L.S.A. Lond., has been appointed House Surgeon to the Branch Hospital of the Seamen's Hospital Society in connexion with the London School for the Study of Tropical Diseases.

REID, HUGH, L.R.C.P. & S. Edin., has been appointed Dispensary Medical Officer of the Montiaght District, near Portadown.

UTLEY, C. J., M.B. Lond., has been appointed Assistant Medical Officer at the Infirmary, Salford Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, S.W.—House Surgeon for six months. Board and residence, and an allowance of £5.

BERRY WOOD ASYLUM, Northampton.—Senior Assistant Medical Officer for five years, unmarried. Salary £200, rising to £250, with board, lodging, and washing, &c.

BIRKENHEAD CHILDREN'S HOSPITAL, Birkenhead.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100 with board and lodging.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Assistant Medical Officer, unmarried. Salary £120, with apartments, board, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN.—Two Clinical Clerkships. Also House Surgeon. Board, residence, &c., are provided and an honorarium of £25 at the completion of six months' approved service.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant Physician.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Lecturer in Physiology.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer for six months, unmarried. Salary at the rate of £80 a year, with board and lodging. Apply to the Secretary, Dispensary, Gartside-street, Manchester.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department, Bowdon, Cheshire. Salary £60 per annum, with board, apartments, and washing.

METROPOLITAN HOSPITAL, Kingsland-road.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon. Appointments tenable for six months. House Physician and House Surgeon, £40 a year. Assistant House Physician and Assistant House Surgeon, £20 a year.

OXFORD EYE HOSPITAL.—Honorary Assistant Surgeon.

PARISH OF ST. GILES, Camberwell.—Assistant Medical Officer, either sex, for one year. £50 and apartments, board, and washing.

ROCHDALE INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £90 per annum, with board, residence, and laundry.

ROYAL HALIFAX INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with an extra allowance of £9 2*s.* 6*d.* per annum, and residence, board, and washing.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £80, board, residence, and laundry provided.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

STROUD GENERAL HOSPITAL.—House Surgeon.—Salary £80 per annum, with board, lodging, and washing.

TOWNSHIP OF TOXTETH PARK.—Junior Assistant Resident Medical Officer for the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Residence at the Dispensary. Salary £75 per annum, with board and residence, and 10*s.* a month allowed for washing.

Births, Marriages, and Deaths.

BIRTHS.

BEAN.—On August 23rd, at Clapham, the wife of Louis C. Bean, M.R.C.S., L.R.C.P., of a son.

BLABER.—On August 22nd, at "Sunnybank," Shoot-up Hill, West Hampstead, the wife of Percy L. Blaber, M.R.C.S., L.R.C.P., of a son.

DAGGETT.—On August 19th, at Boroughbridge, Yorks, the wife of Henry I. Daggett, M.A., M.B. Cantab., of a daughter.

ELLIOT.—On August 19th, at Warwick-square, the wife of Norman B. Elliot, M.D., F.R.C.S., barrister-at-law, of a son.

FEGAN.—On August 22nd, at Fair View, Westcombe-park, Blackheath, S.E., the wife of J. H. C. Fegan, L.R.C.P., M.R.C.S. Eng., of a son.

JAMES.—On August 19th, at Ebor House, Stamford-hill, N., the wife of C. A. James, L.R.C.P., M.R.C.S., D.P.H., of a daughter.

WILDING.—On August 22nd, at The Hawthorns, Hindley, Wigan, the wife of Walter F. W. Wilding, M.R.C.S., L.R.C.P., M.O.H. Hindley, of a daughter.

MARRIAGES.

GROSS—ALBERTS.—On August 16th, at St. John's-wood Synagogue, Phineas Gross, L.R.C.P. Lond., M.R.C.S., of Commercial-road, E., to Rosetta Ernestine, eldest daughter of the late Carl Alberts, Belsize-road, South Hampstead.

HUGGINS—FERRAR.—On August 16th, at St. Mary's, Ealing, Sydney Penrose Huggins, M.B. Lond., M.R.C.S., L.R.C.P., eldest son of S. T. Huggins, M.R.C.S., L.R.C.P., of Compton-terrace, Highbury, to Elizabeth Margaret (Elsie), youngest daughter of the late Rev. Wm. Hugh Ferrar, F.T.C.D., of Little Gidding, Ealing.

MARTIN—BARTLETT.—At the Baptist Church, Westgate-road, Newcastle-upon-Tyne, on Tuesday, 22nd inst., Albert M. Martin, M.B., second son of the late Henry Martin, Esq., of Dene House, South Shields, to Mary Winifred Bartlett (Maimie), younger daughter of J. M. Bartlett, Esq., of Newcastle-upon-Tyne.

DEATHS.

CHARLES.—On August 21st, at Bradmore-road, Oxford, David Hughes Charles, M.D., J.P. for County Tyrone, in his 81st year.

GLOVER.—On August 16th, at Blandford-road, Chiswick, William James Schoedde Glover, M.R.C.S., L.S.A.

*N.B.—A fee of 5*s.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

Notes, Short Comments, and Answers to Correspondents.

THE WORD "DOCTOR."

To the Editors of THE LANCET.

SIRS,—The following definitions of the word "doctor," with their accompanying illustrations, copied from "The Oxford English Dictionary," may interest your readers and do something towards the better understanding of the many shades of meaning the word has.

Doctor [O. F. doctor (-ur, -our, -eur), ad L. *doctor*—orem, teacher, agent, from *docēre* to teach].

1. A teacher, instructor, one who gives instruction in some branch of knowledge or inculcates opinions or principles.—1557: N. T. (Geneva), Matt. xxiii., 10: Be not called Doctors, for there is but one your Doctor, and he is Christe. (*b*) Spec. (Sc.). An assistant-master in a school. 1698. Mr. Francis Cockburn, Mr. Samuel Macom, and Mr. John Wardlaw were doctors of the Edinburgh High School.

2. One who, by reason of his skill in any branch of knowledge, is competent to teach it, or whose attainments entitle him to express an authoritative opinion; an eminently learned man.—1841, Emerson: The wisest doctor is gravelled by the inquisitiveness of a child. (*b*) Transf. One who is eminently skilled in a particular art or craft. 1602, Rowlands: He indeed was a doctor in his arte (of cutpurses).

3. Spec. applied to (*a*) the Doctors of the Church, certain early "fathers" distinguished by their eminent learning so as to have been teachers not only in the Church, but of the Church, and by their heroic sanctity. (*b*) The leading schoolmen of mediæval philosophy.—1858, Milman: Doctors who assumed the splendid titles of the Angelical, the Seraphic, the Irrefragable.

4. One who in any faculty or branch of learning has attained to the highest degree conferred by a University; a title originally implying competency to teach such subject or subjects, but now merely regarded as a certificate of the highest proficiency therein.—1843, Miall: To make Prince Albert a Doctor of Laws. (*b*) Prefixed, as title, to the name (now usually abbreviated Dr.), or in addressing a person.—1882, Edna Lyall: Dr. Tremain was standing by the window. (*c*) Doctor of the chair.—1659, Rushw.: A sermon preached by Robert Abbot, Doctor of the Chair in Oxford.

5. Hence used with express or implied specification of: (*a*) one who is proficient in knowledge of theology: a learned divine.—1871, Morley: He heard only the humming of the doctors as they served forth to congregations of poor men hungering for spiritual sustenance the draff of theological superstition. (*b*) One who is proficient in knowledge of law.—1845, Pattison: With the gravity of a doctor expounding ecclesiastical law.

6. Spec. A doctor of medicine; in popular current use, applied to any medical practitioner.—1725, De Foe: Our doctors themselves (for so we call the surgeons at sea). 1872, George Eliot: A common country doctor. 1884, Gilmour: They apply to the missionary in his capacity of doctor ..... and ..... want him only in so far as he is a doctor. (*b*) Fig. Applied humorously to any agent that gives or preserves health.—1660, Howell: Doctor Diet and Doctor Quiet. Doctor Merriman is requisite to preserve health.

7. Transf. A name given to various mechanical appliances, usually for curing or removing defects, regulating, adjusting, or feeding.—1875, Ure: The superfluous colour is wiped off by the colour doctors. These doctors are thin blades of steel or brass which are mounted in doctor shears, or plates of metal screwed together with bolts.

8. A fish of the genus *Acanthurus*: also called doctor-fish and surgeon-fish.—1850, Nat. Ency.: Termed doctors ..... because they are armed on each side of the tail with a sharp moveable spine like a lancet, which they use with great effect.

9. Angling. A kind of artificial fly.—1895, *Daily News*: With fine tackle and a very small blue doctor.

10. Something used to "doctor" or adulterate food or drink; e.g., a liquor mixed with inferior wine to make it more palatable.—1808, Smeaton: Alum, which is called the doctor, is sold to the bakers at 4*d*. per pound.

11. Naut. A ship's cook; (United States and Australia) the men's cook at a station or camp.—1892, Lentzner: Doctor, the men's cook on a station.

12. Old Slang. A false or loaded die.—1801, *Sporting Mag.*: Loaded a couple of the doctors for throwing a seven and a nine.

Not wishing to trespass too much on your space I communicate none of the combinations of the word.

I am, Sirs, yours faithfully,

Dublin, August 19th, 1899. GEORGE FOY.

MEDICAL ETHICS.

To the Editors of THE LANCET.

SIRS,—A and C are neighbouring medical men on the staff of a general hospital, on consulting terms with one another. C is much the elder man and has done considerable surgery, while A, the younger man, does whatever surgery that may fall to his lot. Both A and C are attending patients in this hospital at the same time. C is operating on two successive days in this hospital and on each occasion enters the room of a private patient of A and leaves part of his clothing on a table in the said room in the course of preparing himself for operating. On one of these occasions he was introduced to the patient and said: "You are in the hands of a good man, just follow out his instructions and no one could do better," or words to that effect. At this time a tentative diagnosis only had been made in A's patient and it was supposed that surgical interference might be necessary shortly. The matron and the nurse in charge of A's patient must have known of these visits at the time or shortly after. No mention was made to A of the above visits either by C, the matron, or the nurse in charge of A's patient, and he finds out about them only by accident. The hospital is a public one and is supported by the inhabitants of the town in general. There was no excuse for C entering the room of A's patient as there was a lounge in the hall-way, within six or eight feet of the operating theatre, where C could have left all of his clothing if he so desired. Now, Sirs, what I ask is an authoritative opinion from you on the following points in medical ethics. 1. Was it not a gross breach of ethics for C to enter the room of A's patient under the above circumstances, and especially to make a second visit the next day? 2. Should not C have at once notified A of these visits and apologised for having made them? 3. When taxed by A for having made them should he not have apologised to A instead of defending his action and denying having done any wrong to A? 4. Should the matron and the nurse in charge of A's patient when they learned of C's visits have notified A of them? 5. If the medical man in charge of a patient is in the hospital or within easy reach of it, should the matron ever prescribe for a patient? A had called in another medical man in consultation to see his patient the day previous to C's first visit. I am very sorry, Sirs, to have troubled you at such length, but there has been so much bickering in connexion with the management of this hospital that an authoritative opinion from you will be of much service to the other members of the staff. Thanking you in advance for the kindness I know you will do me,

I am, Sirs, yours faithfully,

August 2nd, 1899. L.R.C.P.

P.S.—Can you tell me where I can obtain a copy of the English Code of Medical Ethics?

*** So far as we can see C committed no breach of professional etiquette, but it was undoubtedly bad manners for him to use the room of A's patient as a dressing-room. He apparently does not seem to have given the patient any advice except in so far that he advised the patient to follow A's instructions. We do not think that either the matron or the nurse should have interfered. The rules as to non-medical members of the staff prescribing vary in different hospitals. In many the sister of the ward is allowed to give simple linctus or an ether draught without consulting a medical man. There is no recognised official code, but "A Code of Medical Ethics," by Jukes de Styrap (London: H. K. Lewis), is a good book on the matter.—ED. L.

GYNÆCOLOG AL METHODS.

To the Editors of THE LANCET.

SIRS,—Will you or your readers be kind enough to tell me where I can obtain information as to the use of electric illumination of the interior of the uterus; also as to the feasibility of direct (intra-peritoneal) compression of the uterus through an abdominal incision in cases of severe post-partum hæmorrhage?

I am, Sirs, yours faithfully,

August 21st, 1899. L. G.

MEDICAL FEES IN ALSACE-LORRAINE.

A LARGE number of medical practitioners in Alsace-Lorraine have agreed to a tariff of fees which is to come into force with the new year. According to this there is to be no consultation at the medical man's house under 1*s*. and no visit under 1*s*. 6*d*., the fees at night being double. Even in the case of very poor patients a reduction may only be made in a bill if the total amounts to £1 or more. This movement in favour of a universal minimum fee has been brought about by the serious competition at present existing which has resulted in many practitioners accepting 1*s*.—often, indeed, a good deal less—per visit.

"THE LYMPH OF THE NATIONAL VACCINE ESTABLISHMENT."

To the Editors of THE LANCET.

SIRS,—As a public vaccinator of some 18 years' standing I was much interested in your correspondent's letter in THE LANCET of August 19th and signed "P. V." My experience of the new Vaccination Act has been, I should imagine, somewhat unique. In the first place it was distinctly agreed by the board of guardians under whom I act "that should we (the public vaccinators) find the supply of lymph issued by the Local Government Board to be deficient either in quality or quantity we should be at liberty to purchase lymph at any independent place and charge the cost of the same to the board of guardians." On commencing to vaccinate with the National Vaccine Establishment lymph I had a series of failures and was compelled to use an alternative supply. When rendering my first quarter's account I included the cost of this alternative supply in the statement and was met by a flat refusal to pay the amount claimed, the board of guardians giving no reason for such refusal. I thereupon referred the matter to the Local Government Board which authority at once upheld the board of guardians in its breach of contract, at the same time informing me "that

the Board propose as soon as the engagements of the medical staff admit of it to instruct an inspector to report on your method of vaccination." The inference to be drawn from such communication is that the Local Government Board imply that my "method of vaccination" is at fault and therefore responsible for the failures, whereas the lymph they are distributing throughout England and Wales is most unreliable and its use can only result in serious danger to the community. I beg to state that under the old Act I have performed 1044 vaccinations with 29 failures, 18 of which failures were with calf lymph supplied by the National Vaccine Establishment.

I am, Sirs, yours faithfully,

EDWD. A. PIGGOTT, L.R.C.P. & S. Edin., &c.

Clare, Suffolk, August 21st, 1899.

"DIFFICULTIES UNDER THE NOTIFICATION ACT."

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of August 19th a letter signed "W. H." complaining of the action of the medical officer of health of his district. I may state that some years ago the medical officer of health of my district insisted on visiting my patients reported under the Notification Act. I then took steps to prevent him doing so and after some correspondence the matter was referred to the Local Government Board. The decision then given by the Local Government Board was "that the medical officer of health had *no right* under the Act to enter the apartment set apart for the treatment of the patient"; further, "that he could not enter the premises except with the consent of the occupier" or "under Section 102 of the Public Health Act after having obtained an order from a magistrate." You will therefore see that the medical officer of health exceeded his duties in this case and I should advise "W. H." to lodge a complaint with the Local Government Board giving the full facts of the case, when no doubt the medical officer of health will be told his duties. For obvious reasons I should like my name and address left out, but should "W. H." desire it I will be pleased to give him full particulars of my case.

I am, Sirs, yours faithfully,

August 20th, 1899. VERITAS.

"A PUZZLE."

To the Editors of THE LANCET.

SIRS,—Mr. Edward Berdoe has no reason whatever to "puzzle" himself. As M.R.C.S. and L.R.C.P. Edin., he remarks, "I call myself 'Dr.' You, I presume, would restrict the title to possessors of the University degree of M.D. Why, then, is the title generally accorded to the holders of the M.B. degree." The answer is simple—viz., the M.D. and M.B. are both University men and have practically undergone equal intellectual tests and thus there is no analogy between these and non-University men. Further, the distinction between M.D. and M.B. is little more than technical, and it would be invidious and discourteous to deprive the latter of the title of "Dr." The fact that "thousands" of non-graduates style themselves "Dr.," assuming the accuracy of your correspondent's figures, is altogether beside the question, as a good deal of upishness has unfortunately sprung up amongst general practitioners during the last decade or two. Every medical man must know that custom and academic authority assign to graduates the title of "Dr." and withhold it from non-graduates; neither can any plausible talk on the part of an individual or "thousands" of individuals disturb such authority without the interposition of the licensing community. If any M.R.C.S. and L.R.C.P. Ed. elects to style himself "Physician and Surgeon" he has at least the sanction of legal phraseology, although it is a course which in adopting probably does not add a sixpence to the aspirant's pocket.

I am, Sirs, yours faithfully,

CLEMENT H. SEBS, M.R.C.S. Eng., L.R.C.P. Edin.

Queen's-road S.E., August 19th, 1899.

THE *OCEANIC*.

THROUGH the kindness of the builders and owners of the great White Star liner *Oceanic* this largest ship afloat was on Saturday, August 19th, open for the inspection of the public of Belfast. The charge for admission in the forenoon was 2*s.* 6*d.* and in the afternoon it was 1*s.* and the amount realised, about £600, is to be handed over to the funds of the Royal Victoria Hospital, on behalf of which Mrs. Pirrie (wife of Right Hon. W. J. Pirrie, the leading member of the firm of Harland and Wolff, the builders of the *Oceanic*) has put forth such notable exertions. A certain line of route was marked out for the visitors to the ship, so that in about an hour and a half the sightseers were able to pass through each portion of this the latest and most perfect specimen of the ship-building art. The visitors numbered between 12,000 and 13,000. It was in February, 1897, that the order to build the *Oceanic* was given to Messrs. Harland and Wolff by the Oceanic Steam Navigation Company. She was launched on Jan. 14th, 1899. She sailed for Liverpool this week and in September will make her first trip across the Atlantic. The *Oceanic* (in addition to her duties as a trans-Atlantic steamer) will be a mercantile armed cruiser, mounting in time of war 23 guns, which can fire 12 shots per minute. Her crew will consist of 462 men, and she has a promenade deck no less than 400 feet long by 22 wide, clear of the deckhouse on both sides. It may be of interest to state the amount of food requisitioned for this leviathan ship on the round voyage from Liverpool to New York and back again: Fresh beef, 36,000 lb.; mutton, 6700 lb.; veal, 960 lb.; fresh fish, 2610 lb.; chickens, 1200; geese, 100; grouse, brace, 100; apples, 44 barrels; lemons, 14 boxes; cabbages, 700 head; onions, 12 cwt.; beetroot, 4 cwt.; ice cream, 446 blocks; milk, 1541 quarts; eggs, 18,376; corned beef, 1775 lb.; lamb, 960 lb.; pork, 720 lb.; fowls, 504; ducks, 396; turkeys, 132; potatoes, 29 tons; oranges, 43 boxes; tomatoes, 14 crates; carrots, 9 cwt.; turnips, 5 cwt.; asparagus, 240 bundles. It is said that at the end of a voyage 42,000 pieces of linen will require to be washed. The victualling staff for the *Oceanic* will number about 160. The above figures show the arrangements made to provide food for a population of 2000 persons (passengers and crew) which will be the full complement of voyagers on this huge floating city. It is noteworthy that during the building of the *Oceanic*—although sometimes as many as 1500 men were employed—no fatal accident occurred to any of the workers.

"THE LAURIA FUND."

To the Editors of THE LANCET.

SIRS,—We beg to acknowledge the following additional amounts in aid of the above fund.

We are, Sirs, yours faithfully,

B. B. HARTNELL,
1, Ryecroft-street, Fulham, S.W.,
JOHN H. BARRS,
6, Wandsworth-bridge-road, S.W.,
} Hon. Secs.

August 22nd, 1899.

	£	*s.*	*d.*		£	*s.*	*d.*
J. O. W.	2	2	0	Mr. J. Silles	1	1	0
Mr. F. Silles	1	1	0	Dr. Sutton	1	1	0

THE PLAGUE IN LONDON DURING THE 17TH CENTURY.

HADYN gives the mortality as 30,578, but according to Corbyn Morris when the plague made its first appearance in London in 1603 it caused 36,269 deaths. During the succeeding 76 years, the last-named authority informs us, the disease was absent from the bills of mortality on four occasions only—namely, in 1629, 1633, 1635, and 1670; but in most years the mortality was trifling, having been under 100 no fewer than 45 times. The total mortality from first to last during the 77 years from 1603 to 1679 was 188,571; the most deadly years being 1603, 1625, 1636, and 1665, when the deaths amounted respectively to 36,269, 35,417, 10,400, and 68,596, equal in the aggregate to about 80 per cent. of the whole. In 1666, the year of the Great Fire, there were 1998 deaths from the plague in London. In the following year 35 deaths were registered and 14 in the year after that. In 1669 the number of fatal cases fell to three and in the next year to zero. During the succeeding decade, 1671–80, the deaths from plague numbered 30 in all, but the greatest number in any one year was five and the last year of the series remained free. The last recorded deaths from plague in London took place in 1679 when two were entered. Since that date the metropolis has happily remained immune.

"CASE TAKING."

To the Editors of THE LANCET.

SIRS,—I shall be much obliged for information as to a simple and handy method of recording short notes on cases seen in the consulting-room.

I am, Sirs, yours faithfully,

August 21st, 1899. M.

A CONVENIENT ASSORTMENT OF CORKS.

MESSRS. AYRTON AND SAUNDERS of 34, Hanover-street, Liverpool, forward us a cloth-covered cardboard case, 14 inches by 7½ inches, with lid, and divided into 10 sections, containing samples of the 10 varieties of corks most generally in demand. Each section is labelled with the particular designation of the corks contained in it and the price per gross, thus enabling the practitioner to order at any time the exact cork which he requires. The case as it is sent out contains about two and a half gross of corks and is forwarded at the cost of 2*s.* 6*d.* post free.

M.R.C.S.—"Lectures on Medicine to Nurses." By Herbert Cuff, M.D. Lond. (London: J. & A. Churchill, 1896.) "Notes on Medical Nursing." By the late James Anderson, M.D. Aberd. (London: H. K. Lewis, 1897.)

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *East Anglian Daily Times, Brighton Gazette, Yorkshire Post, Leeds Mercury, Bristol Mercury, Western Mercury, Newcastle Daily Chronicle, Indian Mirror, Oswestry Advertiser, South Durham Mercury, Eastern Morning News, Lancaster Guardian, Architect, Citizen, Times of India, Nottingham Guardian, Punch, Shields Daily Gazette, Mining Herald, Indian Daily News, Kentish Mercury, Irish News, Merthyr Times, Hexham Herald, Sunderland Morning Mail, Warder, Hawick Advertiser, Hertfordshire Mercury, Pontefract Telegraph, Ilford Guardian, Isle of Man Times, Manx Sun, Southport Visitor, Grimsby Times,*

Manchester Guardian, The Builder, Aberdeen Herald, Windsor Chronicle, Rotherham Advertiser, Haddington Courier, Surrey Advertiser, Leith Herald, Surrey Comet, Watford Advertiser, Glasgow Herald, Oxford Times, North London Echo, Oundle Guardian, Scientific American, Derby Express, Oban Times, Fife News, China Mail, Cheshire County News, &c. &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 24th, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Rad. in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Aug. 18	30·13	N.W.	...	114	75	61	62	68	Cloudy
" 19	30·17	N.W.	0·05	105	75	64	64	68	Overcast
" 20	30·26	N.E.	...	114	76	62	64	68	Hazy
" 21	30·30	E.	...	115	77	54	55	60	Fine
" 22	30·30	E.	...	111	77	55	58	62	Hazy
" 23	30·26	S.E.	...	114	81	58	61	63	Hazy
" 24	30·10	S.E.	...	118	82	62	64	67	Hazy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (29th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases of Neurasthenia and other Nutritional Disorders of the Nervous System. (Vacation Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Harry Campbell: Clinical Demonstration.

THURSDAY (31st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. Jonathan Hutchinson: Clinical Demonstration.

FRIDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Ewart: Clinical Demonstration.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1899, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1899 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them. Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

Communications, Letters, &c., have been received from—

A.—Mr. A. Athill-Cruttwell, Edinburgh; Messrs. Allen and Hanburys, Lond.; Messrs. C. Ash and Sons, Lond.; Messrs. Armour and Co., Lond.; Mr. C. Abbott, Liverpool; Automobilist M.D.; Mr. P. Aaser, Kristiana; Mr. R. B. Anderson, Lond.; Mr. R. Atkinson, Lond.

B.—Dr. A. G. Bagshawe, Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Messrs. W. Foster Brown and Co., Montreal; Messrs. W. H. Bailey and Son, Lond.; Messrs. A. and C. Black, Lond.; Messrs. F. B. Benger and Co., Manchester; Birkenhead Children's Hospital, Secretary of; Mr. A. Bygott, Birmingham; Messrs. R. Boyle and Son, Lond.

C.—Mr. H. S. Collier, Lond.; Cortland Wagon Co., Lond.; Messrs. W. and R. Chambers, Edinburgh; Messrs. Clay, Paget, and Co., Lond.; C. W. H.; Mr. H. Colls, Birmingham; Messrs. Cassell and Co., Lond.; Cantab, Lond.

D.—Dr. J. H. Dauber, Lond.; Durham University College of Medicine, Secretary of; Major Deane, R.A.M.C., Calcutta; Mr. H. J. Dadysett, Bombay; Mr. F. Davidson, Lond.; Mr. G. Dalton, Lond.; Paul R. Derrick Advertising Agency, Lond., Secretary of; Messrs. Davy, Hill, Son, and Co., Lond.; Messrs. A. De St. Dalmas and Co., Leicester; Mr. R. T. Devlin-Hamilton, Tunbridge Wells.

E.—Messrs. Evans and Wormull, Lond.; E. H. M.

F.—Mr. Athol Forbes, Great Yarmouth; The Funks and Wagnalls Co., Philadelphia; Mr. G. Foy, Dublin; F. W.; Messrs. Fannin and Co., Dublin.

G.—Mr. F. Goudge, Liverpool; Dr. W. Le Grand, South Normanton; Glasgow Royal Infirmary, Secretary of; Dr. H. C. Gillies, Lond.; Mr. T. H. Goodman, Haverhill; Mr. A. R. Gilbert, Newcastle-on-Tyne; Mr. H. J. Glaisher, Lond.

H.—Dr. J. M. Hobson, Croydon; Messrs. W. C. Henderson and Son, St. Andrews; Mr. H. C. Hopkins, Bath; Mr. C. H. Hunter, Lond.; Mr. G. Hamilton, Liverpool; Dr. T. B. Hearder, Ilkley; Mr. R. L. Hough, Lond.; Dr. T. W. Hime, Bradford.

I.—Messrs. J. G. Ingram, Leicester; Institute of Chemistry, Registrar of; International Congress of Women, Committee of.

J.—Mr. Mark Judge, Lond.; Mr. S. James, Cooch Behar, India; Messrs. W. and A. K. Johnston, Edinburgh; J. F. H.; Dr. W. Jaques, Washington, co. Durham.

K.—Mr. Kinsey-Morgan, Bournemouth.

L.—Messrs. Lee and Nightingale, Liverpool; A Leicester Man; London and South-Western Bank; Messrs. J. Lyons and Co., Lond.; Mr. C. B. Leese, Lond.

M.—Mr. A. P. Mürtz, Lond.; Dr. A. B. Morison, Hartlepool; Dr. A. S. Morton, Lond.; Messrs. Macmillan and Co., Lond.; Dr. T. McIlroy, Newtownards; Medical Society of Victoria, Melbourne, Hon. Treasurer of; Mr. J. McLaughlin, Coleraine; Mr. K. W. Millican, New York; Dr. P. W. Macdonald, Dorchester, Dorset; Macclesfield Infirmary, Secretary of; Mr. W. L. G. Morgan, Worcester; Dr. J. Ross MacMahon, Lond.; Mr. B. G. Moynihan, Leeds.

N.—Messrs. Newton, Chambers, and Co., Thorncliffe; Neyroud's Advertising Agency, Lond.

O.—Omega Odourless Gas Stove Syndicate, Bristol; Messrs. Oliver and Boyd, Edinburgh; O. G. J.

P.—Mr. Y. J. Pentland, Edinburgh; Messrs. Parke, Davis, and Co., Lond.; Mr. R. J. Parry, Lond.; Mr. B. S. Patker, Lond.

R.—Mr. R. Redpath, Newcastle-on-Tyne; Royal Devon and Exeter Hospital, Secretary of; Rochdale Infirmary, Secretary of; Messrs. Robertson and Scott, Edinburgh; Mr. J. H. Roberts, Penybont; Dr. R. F. Richardson, Nottingham; R. B.; Messrs. Reynolds and Branson, Leeds.

S.—Mr. A. Stenhouse, Glasgow; Messrs. Street and Co., Lond.; St. Mungo's College, Glasgow, Secretary of; Society of Apothecaries, Secretary of; Mr. Clement Sers, Lond.; Dr. Sherrard, Hailsham; Mr. C. F. Smith, Halifax; Messrs. J. P. Segg and Co., Lond.; Mr. O. Smithson, Grays.

T.—Mr. Pridgin Teale, Leeds; The Retreat, York, Secretary of.

U.—University College, Sheffield, Dean of; University College of South Wales, Cardiff, Secretary of; University Examination Postal Institute, Manager of.

V.—V. B. F., Lond.

W.—Wr. F. H. Welch, Lee; Messrs. Whitney and Moore, Dublin; Mr. A. Watson, Edinburgh; Mr. W. H. Wintingham, Grimsby; Professor A. E. Wright, Netley; Dr. F. J. Woollacott, Lond.; Western General Dispensary, Lond., Secretary of; Mr. W. F. Wilding, Hindley; Messrs. Willing, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. Adam, West Malling; Dr. R. Allison, Liverpool; A. T. S.; A. S. C.; A. H.

B.—Dr. G. G. Bothwell, Twyford; Dr. S. Bowes, Nantyglo; Bootle Borough Hospital, Secretary of; Mr. L. Backus, Chatham, Ontario; Dr. J. B. Bradbury, Cambridge; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. L. C. Bean, Lond.; Mr. A. H. Brewer, Totland Bay; Messrs. Boulton and Paul, Norwich.

C.—Mrs. A. Chapman, Lond.; C. H., Northwich; C. P. C.; Church Stretton Private Asylum, Clerk of; C. F. S.; Mr. D. J. Carroll, Clonmel; C. L. B.; County Asylum, Prestwich, Treasurer of.

D.—Dr. C. V. Dingle, Middlesbrough; Dr. T. B. Dunn, Lond.; Doctor, Bournemouth, Miss A. L. Diggs, Topeka, Kansas; Mr. T. E. Dobbs, Upper Parkstone.

E.—Dr. W. Ewart, Lond.; Mr. H. S. Elworthy, Lond.; E. A. L.; E. F.; E. R. B.; Mr. J. Elliott, Stroud.

F.—Mr. P. J. Freyer, Lond.; F. J. A.; F. W. P.

G.—Fleet-Surgeon T. D. Gimlette, Haslar; G. T. W. N.; Dr. Gange, Tuxford; Dr. G.; Grimsby News Co.

H.—Mr. T. A. Hawkesworth, Thrapstone; H. J. W.; Mr. W. Heap, Liscard; Mr. J. Hawkings, Lond.; Hospital for Women and Children, Leeds, Secretary of; Mr. W. J. Hawken, Manchester; Miss Hanson, Bingley; Mr. C. C. Hinson, New Ross; Hovis Bread Flour Co., Macclesfield; Mr. W. A. Hardiker, Priors Marston; Mr. J. M. Hall, Connah's Quay.

J.—Rev. E. Jerman, Wrexham; J. C. P.; J. W. G.; J. P.; J. M. H.; J. T. M.; J. McN.; J. M. N.

K.—Dr. C. S. Kilner, Bury St. Edmunds; Mr. W. P. Kirwan, Oranmore.

L.—Mr. G. Ley, H.M.S. *St. Vincent*, Portsmouth; Messrs. Laughland, Mackay, and Co., Lond.; L. M.; L. J. P. M.; Dr. J. S. Lyttle, Pontypridd; Locum Tenens, Waltham; Dr. A. H. N. Lewers, Lond.; Dr. A. Ledingham, Manchester; Dr. C. Lamplough, Chatteris.

M.—Mr. W. A. Mushé, Lond.; Mr. H. G. Maclagan, Melrose; Mr. J. McClean, Constantinople; Mr. J. McLintock, Slamannan; M.B., Stony Stratford; M. B. S.; Mr. A. K. Martin, Newcastle-on-Tyne; Midland Medical Agency, Birmingham; M.B., Cambridge.

N.—Northern Medical Association, Glasgow.

O.—Owner, Brighton.

P.—Mr. F. R. Pearse, Ripley; Miss P., Lond.

R.—Mr. W. J. Roalfe-Cox, Mortimer; R. F. W.; R. T. J.; Dr. Rose, Horwich; Royal United Hospital, Bath, Secretary of.

S.—Mr. C. Sandfield, Folkestone; Dr. S. H. Snell, Grays; Staffs County Asylum, Clerk of; Mr. E. Stuart, East Cottingwood; Smedley's Hydropathic, Matlock, Manager of; Salford Royal Hospital, Secretary of; Mr. R. Simpson, Epperstone; Dr. J. H. Sequeira, Lond.; Sister, Plymouth; Surgeon, Ilford.

T.—Dr. E. J. Tynan, Coolgardie, Western Australia; Tottenham Hospital, Secretary of; T. S. F.; Mr. J. Taylor, Ranelagh.

W.—Mr. J. H. Wallis, Stratford-on-Avon; Miss Woodward, Lond.; Mr. E. H. Worth, Scorrier; W. W.; Messrs. Watkins and Osmond, Lond.; Wolverhampton General Hospital, Secretary of; W. E. P.; W. J.; W. H. A.

Z.—Zenana Medical College, Lond., Hon. Secretary of.

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION. POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 8	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements	Ditto	0 4 6
	Every additional Line	0 0 6

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.
Terms for Position Pages and Serial Insertions on application.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, Rue Traversière, Asnières Paris.